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Kansas University



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VOL. VIII.

No. 3.

BULLETIN OF THE
UNIVERSITY OF KANSAS.

CATALOGUE

1906-'07.



LAWRENCE, KAN.

Forty-first Annual Catalogue

OF THE

UNIVERSITY OF KANSAS

For the Year 1906-'07

AND

Announcements for the Year 1907-'08.



LAWRENCE, KANSAS,

APRIL, 1907.

THE
STATE OF KANSAS
1907

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UNIVERSITY OF CALIFORNIA

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CHRONOLOGICAL TABLE.

-
- 1861.—Congress set apart and reserved for the use and support of a State University seventy-two sections of land.
- 1863.—Lawrence selected as location for the University of Kansas.
- 1864.—The University organized by the legislature.
- 1865.—March 31, first meeting of the Board of Regents.
- 1866.—July 19, Regents elected the first Faculty of the University, consisting of Elial Jay Rice, A. M., David Hamilton Robinson, A. M., and Francis Huntington Snow, A. M.
- 1866.—North College erected.
- 1866.—September 12, first session of the University opened at North College.
- 1870.—Department of Engineering organized.
- 1872.—Fraser Hall erected.
- 1876.—Normal Department established.
- 1877.—Department of Music organized.
- 1878.—Department of Law organized.
- 1883.—Medical Hall (old Chemistry Building) erected.
- 1885.—Department of Pharmacy established.
- 1885.—Normal Department discontinued.
- 1886.—Snow Hall erected.
- 1891.—The Preparatory Department discontinued, the work being left to the high schools of the state.
- 1891.—The University reorganized and Schools of Arts, Engineering, Law, Fine Arts and Pharmacy established.
- 1894.—Spooner Library erected.
- 1894.—Chancellor's residence erected.
- 1895.—Blake Hall erected.
- 1896.—The Graduate School established.
- 1899.—The Fowler Shops erected.
- 1899.—The School of Medicine established.
- 1900.—Chemistry and Pharmacy Building erected.
- 1902.—Natural History Museum Building erected.
- 1904.—The name of the School of Arts changed to the College of Liberal Arts and Sciences.
- 1904.—Green Hall erected.
- 1905.—Full four-year course in medicine established.
- 1905.—Eleanor Taylor Bell Memorial Hospital erected.
- 1906.—Robinson Auditorium-Gymnasium erected.
- 1906.—Clinical Laboratory erected.
- 1907.—Civil and Mechanical Engineering Building erected.

OFFICE HOURS.

THE CHANCELLOR OF THE UNIVERSITY,

Room 4, Fraser Hall,
10 A. M. to 12 M. and 2 to 4 P. M.

THE SECRETARY OF THE UNIVERSITY,

Room 9, Fraser Hall,
8:30 A. M. to 12:30 P. M. and 1:30 to 5 P. M.

THE REGISTRAR OF THE UNIVERSITY,

Room 9, Fraser Hall,
8 A. M. to 12 M. and 1:30 to 5 P. M.

THE DIRECTOR OF THE SUMMER SESSION,

Room 17, Fraser Hall,
Tuesdays and Thursdays, 9 to 10 A. M., first term.
Mondays, Wednesdays, and Fridays, 9 to 10 A. M., second term.

THE DEAN OF THE GRADUATE SCHOOL,

Room 13, Fraser Hall,
9 to 10 A. M.

THE DEAN OF THE COLLEGE OF LIBERAL ARTS AND SCIENCES,

Room 1, Fraser Hall,
10:15 A. M. to 12:15 P. M.

THE DEAN OF THE SCHOOL OF ENGINEERING,

Blake Hall, first floor.
9 A. M. to 12 M.

THE DEAN OF THE SCHOOL OF LAW,

Green Hall,
9 to 10 A. M.

THE DEAN OF THE SCHOOL OF FINE ARTS,

North College,
11 A. M. to 12 M. and 2:30 to 5 P. M.

OFFICE HOURS.

7

THE DEAN OF THE SCHOOL OF PHARMACY,
2d floor, Chemistry and Pharmacy Building,
10 to 11 A. M.

THE DEAN OF THE SCIENTIFIC DEPARTMENT, SCHOOL OF
MEDICINE,
Basement, Medical Hall,
10:15 A. M. to 12:15 P. M.

THE DEAN OF THE CLINICAL DEPARTMENT, SCHOOL OF
MEDICINE,
Eleanor Taylor Bell Memorial Hospital, Rosedale, Kan.,
9 A. M. to 12 M. and 1 P. M. to 5 P. M.

UNIVERSITY CALENDAR.

ACADEMIC YEAR 1906-'07.

- Jan. 4, Friday—Christmas recess ends.
 Jan. 28 to Feb. 1, Monday to Friday, inclusive—Semiannual examinations.
 Feb. 4, Monday—Second term begins.
 March 29, Wednesday—First half-term ends.
 April 1, Monday—Second half-term begins.
 May 2, Thursday—Spring concert by University Mandolin Club.
 May 14, Tuesday—Spring concert by University Orchestra.
 May 27 to 31, Monday to Friday, inclusive—Annual examinations.
 May 29, Wednesday—Commencement concert by Music department, School of Fine Arts.
 June 2, Sunday, 8 P. M.—Baccalaureate sermon.
 June 3, Monday, 8 P. M.—Phi Beta Kappa address.
 June 4, Tuesday, 10:30 A. M.—Annual Alumni address.
 June 4, Tuesday, 8 P. M.—Chancellor's reception.
 June 5, Wednesday, 10 A. M.—Commencement exercises.
 June 6, Thursday—Opening of Summer Session.

ACADEMIC YEAR 1907-'08.

- Sept. 18, Wednesday—First term begins.
 Sept. 18, 19, 20, and 21, Wednesday, Thursday, Friday, and Saturday—Examination of candidates for admission, and presentation of certificates from high schools, academies, and other institutions.
 Sept. 20, Friday—General assembly of students and annual address, in University Hall, at 10 A. M.
 Nov. 18, Monday—Second half-term begins.
 Nov. 19, Tuesday—Winter concert by University Orchestra.
 Nov. 21, Thursday—Winter concert by University Glee and Mandolin Clubs.
 Nov. 28 and 29, Thursday and Friday—Thanksgiving recess.
 Dec. 10, Tuesday, 8 P. M.—Christmas concert by Music department, School of Fine Arts.

CHRISTMAS RECESS—Saturday, December 21, to Friday, January 3, inclusive.

- Jan. 3, Friday—Christmas recess ends.
 Feb. 3 to 7, Monday to Friday, inclusive—Semiannual examinations.
 Feb. 10, Monday—Second term begins.
 April 3, Friday—First half-term ends.
 April 6, Monday—Second half-term begins.
 May 7, Thursday—Spring concert by University Glee and Mandolin Clubs.
 May 8 and 9—Spring Music Festival.
 May 12, Tuesday—Spring concert by University Orchestra.
 June 1 to 5, Monday to Friday, inclusive—Annual examinations.
 June 5, Friday—Commencement concert by Music department, School of Fine Arts.
 June 7, Sunday, 8 P. M.—Baccalaureate sermon.
 June 8, Monday, 8 P. M.—Sigma Xi address.
 June 9, Tuesday, 10:30 A. M.—Annual Alumni address.
 June 9, Tuesday, 8 P. M.—Chancellor's reception.
 June 10, Wednesday, 10 A. M.—Commencement exercises.
 June 11, Thursday—Opening of Summer Session.

1906.	1907.		1908.
JULY.	JANUARY.	JULY.	JANUARY.
S M T W T F S	S M T W T F S	S M T W T F S	S M T W T F S
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22 23 24 25 26 27 28	20 21 22 23 24 25 26	21 22 23 24 25 26 27	19 20 21 22 23 24 25
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AUGUST.	FEBRUARY.	AUGUST.	FEBRUARY.
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SEPTEMBER.	MARCH.	SEPTEMBER.	MARCH.
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16 17 18 19 20 21 22	17 18 19 20 21 22 23	22 23 24 25 26 27 28	22 23 24 25 26 27 28
23 24 25 26 27 28 29	24 25 26 27 28 29 30	29 30	29 30 31
30	31
OCTOBER.	APRIL.	OCTOBER.	APRIL.
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21 22 23 24 25 26 27	21 22 23 24 25 26 27	20 21 22 23 24 25 26	19 20 21 22 23 24 25
28 29 30 31	28 29 30	27 28 29 30 31 .. .	26 27 28 29 30 .. .
..
NOVEMBER.	MAY.	NOVEMBER.	MAY.
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11 12 13 14 15 16 17	12 13 14 15 16 17 18	10 11 12 13 14 15 16	10 11 12 13 14 15 16
18 19 20 21 22 23 24	19 20 21 22 23 24 25	17 18 19 20 21 22 23	17 18 19 20 21 22 23
25 26 27 28 29 30 ..	26 27 28 29 30 31 ..	24 25 26 27 28 29 30	24 25 26 27 28 29 30
..	31
DECEMBER.	JUNE.	DECEMBER.	JUNE.
S M T W T F S	S M T W T F S	S M T W T F S	S M T W T F S
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2 3 4 5 6 7 8	2 3 4 5 6 7 8	8 9 10 11 12 13 14	7 8 9 10 11 12 13
9 10 11 12 13 14 15	9 10 11 12 13 14 15	15 16 17 18 19 20 21	14 15 16 17 18 19 20
16 17 18 19 20 21 22	16 17 18 19 20 21 22	22 23 24 25 26 27 28	21 22 23 24 25 26 27
23 24 25 26 27 28 29	23 24 25 26 27 28 29	29 30 31	28 29 30
30 31	30

GENERAL INFORMATION.

THE GENERAL CATALOGUE of the University of Kansas is issued in the spring of each year. A copy will be sent free to any one desiring it.

SEPARATE CATALOGUES of the schools of the University are issued at the same time with the General Catalogue of the University. Separate catalogues will give complete information as to each school or department of the University. Prospective students of the School of Engineering, the School of Law, the School of Pharmacy, the School of Fine Arts, the School of Medicine or the Summer Session will ask for the separate catalogue of the desired school. They are issued free of cost.

THE ALUMNI CATALOGUE of the University is issued at intervals, giving a list of the graduates of the University. Copies are sent free to graduates and former students of the University.

THE UNIVERSITY NEWS BULLETIN is issued weekly from the Registrar's office, for the purpose of furnishing the newspapers, high-school students and others of the state items of interest regarding University affairs. It will be sent regularly, without charge, to any one who may express a desire to receive it.

A HIGH-SCHOOL MANUAL is issued every two years, giving in detail the requirements for entrance to the different schools of the University, together with suggestions as to methods, courses of study, laboratory equipment, and a list of accredited high schools.

SPECIAL BULLETINS are issued during the University year covering topics of importance to the University and the schools and colleges of the state.

THE UNIVERSITY CALENDAR is posted weekly upon the local bulletin-board, announcing lectures, concerts, prizes, and other matters of public interest under the auspices of the University, and as soon as possible will be printed in sufficient numbers for distribution, on request, to high schools of the state and to graduates and former students.

For catalogues and other information, address

THE UNIVERSITY OF KANSAS,
Lawrence, Kan.

PART I.
OFFICERS OF THE UNIVERSITY.

(13)

BOARD OF REGENTS.

CHANCELLOR FRANK STRONG, Lawrence.....	<i>Ex officio.</i>	
HON. THOMAS M. POTTER, Peabody	Term expires	1909
HON. ALEXANDER C. MITCHELL, Lawrence, “	“	1909
HON. WILLIAM A. WHITE, Emporia	“	1909
HON. SCOTT HOPKINS, Horton	“	1911
HON. J. WILLIS GLEED, Topeka.....	“	1911
HON. WILLIAM Y. MORGAN, Hutchinson....	“	1911

Officers of the Board.

CHANCELLOR FRANK STRONG.....	<i>President, ex officio.</i>
THOMAS M. POTTER.....	<i>Vice-president.</i>
WILLIAM Y. MORGAN.....	<i>Secretary.</i>

COMMITTEES OF THE BOARD.

Buildings:

Messrs. WHITE, POTTER, and HOPKINS.

Grounds:

Messrs. POTTER, WHITE, and MORGAN.

Auditing:

Messrs. MORGAN, GLEED, and MITCHELL.

Clinical Department:

Messrs. MITCHELL, WHITE, and HOPKINS.

Finance:

Messrs. GLEED, MORGAN, and POTTER.

Organization and Policy:

Messrs. HOPKINS, MITCHELL, and GLEED.

ADMINISTRATIVE OFFICERS.

THE UNIVERSITY.

FRANK STRONG, PH. D., Chancellor.

WILLIAM H. CARRUTH, PH. D., Vice-president of the Faculties.

EDWARD E. BROWN, Secretary and Purchasing Agent.

GEORGE O. FOSTER, A. B., Registrar.

WILLIAM H. JOHNSON, A. M., High-school Visitor.

EBEN F. CROCKER, Superintendent of Buildings and Grounds.

THE SCHOOLS.

FRANK W. BLACKMAR, PH. D., Dean of the Graduate School.

OLIN TEMPLIN, A. M., Dean of the College of Liberal Arts and Sciences.

FRANK O. MARVIN, A. M., Dean of the School of Engineering.

JAMES W. GREEN, A. M., Dean of the School of Law.

CHARLES S. SKILTON, A. B., Dean of the School of Fine Arts.

LUCIUS E. SAYRE, B. S., PH. M., Dean of the School of Pharmacy.

MERVIN T. SUDLER, PH. D., Dean of Scientific Department, School of Medicine.

GEORGE H. HOXIE, M. D., Dean of Clinical Department, School of Medicine.

ARTHUR T. WALKER, PH. D., Director of the Summer Session.

LIBRARY AND GYMNASIUM.

CARRIE M. WATSON, A. B., Librarian.

JAMES NAISMITH, A. B., M. D., Director of Gymnasium.

THE MUSEUMS.

FRANK STRONG, PH. D., *ex officio* Director of the Museums.

FRANCIS H. SNOW, PH. D., LL. D., Curator of the Entomological Collections.

LEWIS L. DYCHE, A. M., M. S., Curator of the Mammals, Birds, and Fishes.

CLARENCE E. MCCLUNG, PH. D., Curator of the Vertebrate Paleontological Collections.

ERASMUS HAWORTH, PH. D., Curator of the Geological and Mineralogical Collections.

WILLIAM C. STEVENS, M. S., Curator of the Herbarium.

ALEXANDER M. WILCOX, PH. D., Curator of the Classical Museum.

UNIVERSITY GEOLOGICAL SURVEY OF KANSAS.

FRANK STRONG, PH. D., Director, *ex officio*.

ERASMUS HAWORTH, PH. D., Superintendent and Geologist.

EDGAR H. S. BAILEY, PH. D., Chemist.

UNIVERSITY COUNCIL.

THE CHANCELLOR OF THE UNIVERSITY, *Chairman.*

WILLIAM CHASE STEVENS, *Secretary.*

Professors and heads of departments of the schools of the University.

THE FACULTIES.

The Faculty of each school is made up of the professors and heads of departments offering work in that school, together with other instructors whose work is chiefly in that school.

Each Faculty is the legal governing body in all matters connected *exclusively* with that school.

OFFICERS OF INSTRUCTION AND ADMINISTRATION.

The officers of instruction and administration in the University are divided into the following groups:

PROFESSORS.

ADJUNCT PROFESSORS.

ASSOCIATE PROFESSORS.

ASSISTANT PROFESSORS.

INSTRUCTORS.

ASSISTANT INSTRUCTORS.

LIBRARIAN AND ASSISTANTS.

BUSINESS AND EXECUTIVE OFFICERS.

FELLOWS AND SCHOLARS.

PROFESSORS.

FRANK STRONG.

A. B., 1884, A. M., 1893, PH. D., 1897, (Yale).

Chancellor of the University, and President of the Faculties,
1902.* (4 F.†) 1318 Louisiana St.

WILLIAM HERBERT CARRUTH.

A. B., 1880, (University of Kansas).

A. M., 1889, PH. D., 1893, (Harvard).

*Vice-president of the Faculties, and Professor of Germanic
Languages and Literatures, 1882; 1879.*
(28 F.) 1342 Louisiana St.

* The date after each title indicates the year of appointment to the present rank ;
a second date denotes the year of first appointment in the University, when that fact
is not indicated by the first date.

† Abbreviations: B = Blake Hall.

C = Chemistry Building.

D = Dick Building Studios.

F = Fraser Hall.

G = Green Hall.

L = Spooner Library.

M = Medical Hall.

Mu = Museum of Natural History.

N = North College.

R G = Robinson Gymnasium.

S = Snow Hall.

Sh = Fowler Shops.

FRANCIS HUNTINGTON SNOW.

A. B., 1862, A. M., 1865, PH. D., 1881, (Williams).

LL. D., 1890, (Princeton).

*Professor of Organic Evolution, Systematic Entomology,
and Meteorology, 1901; 1866. (Mu.) 1345 Louisiana St.*

EPHRAIM MILLER.

A. B. 1855, A. M., 1858, PH. D., 1895, (Allegheny).

Professor of Mathematics and Astronomy, 1875; 1874.

(23 and 25 F.) 1244 Tennessee St.

JAMES WOODS GREEN.

A. B., 1866, A. M., 1886, (Williams).

Dean of the School of Law, and Professor of Law, 1878.

(G.) 637 Tennessee St.

FRANK OLIN MARVIN.

A. B., 1871, A. M., 1874, (Allegheny).

*Dean of the School of Engineering, and Professor of Civil
Engineering, 1882; 1875.*

(1st floor, B.) 1603 Massachusetts St.

EDGAR HENRY SUMMERFIELD BAILEY.

PH. B., 1873, (Yale).

PH. D., 1883, (Illinois Wesleyan).

*Professor of Chemistry and Metallurgy, and Director of
Chemical Laboratories, 1883. (C.) 1329 Ohio St.*

ALEXANDER MARTIN WILCOX.

A. B., 1877, PH. D., 1880, (Yale).

Professor of Greek Language and Literature, 1885.

(18 F.) 1605 Vermont St.

LUCIUS ELMER SAYRE.

B. S., 1897, (University of Michigan).

PH. G., 1866, PH. M., 1896, (Philadelphia).

*Dean of the School of Pharmacy, and Professor of Phar-
macy, 1885. (C.) 1323 Ohio St.*

LEWIS LINDSAY DYCHE.

A. B., B. S., 1884, A. M., 1886, M. S., 1888, (University of
Kansas).

Professor of Systematic Zoölogy, 1889; 1883.

(Mu.) Southeast of City Limits.

FRANK WILSON BLACKMAR.

PH. D., 1889, (Johns Hopkins).

Dean of the Graduate School, and Professor of Sociology and Economics, 1889. (13 F.) 1115 Ohio St.

CHARLES GRAHAM DUNLAP.

A. B., 1883, A. M., 1899, (Ohio Wesleyan).

LITT. D., 1892, (Princeton).

Professor of English Literature, 1890; 1887.

(14 F.) 925 Kentucky St.

CARL ADOLPH PREYER, (Vienna).

Professor of Piano, Counterpoint, Canon, and Fugue, 1892.

(N.) 721 Rhode Island St.

OLIN TEMPLIN.

A. B., 1886, A. M., M. S., 1890, (University of Kansas).

Dean of the College of Liberal Arts and Sciences, and Professor of Philosophy, 1893; 1886.

(1 F.) 1025 Missouri St.

EDWIN MORTIMER HOPKINS.

A. B., 1888, PH. D., 1894, (Princeton).

Professor of Rhetoric and English Language, 1893; 1889.

(22 F.) 1201 Tennessee St.

FRANK HEYWOOD HODDER.

A. B., 1883, PH. M., 1883, (University of Michigan).

Professor of American History and Political Science, 1893; 1891.

(13 F.) 1115 Louisiana St.

ERASMUS HAWORTH.

B. S., 1881, M. S., 1884, (University of Kansas).

PH. D., 1888, (Johns Hopkins).

Professor of Geology, Mineralogy, and Mining, and Superintendent of the Geological Survey, 1894; 1892.

(S.) 1503 Massachusetts St.

ARTHUR TAPPAN WALKER.

A. B., 1887, (University of New York City).

A. M., 1892, (Vanderbilt).

PH. D., 1898, (University of Chicago).

Director of the Summer Session, and Professor of Latin Language and Literature, 1897.

(17 F.) 1647 Louisiana St.

WILLIAM CHASE STEVENS.

B. S., 1885, M. S., 1893, (University of Kansas).

Professor of Botany, 1899; 1889.

(9 and 10 S.) 1121 Louisiana St.

ARVIN SOLOMON OLIN.

A. B., 1892, (Ottawa University).

A. M., 1894, (University of Kansas.)

Professor of Education, 1899; 1893.

(12 F.) 1134 Louisiana St.

WILLIAM ALEXANDER GRIFFITH.

(Academy Julien, Paris).

Professor of Drawing and Painting, 1899.

(S.) 1144 Indiana St.

EUGÉNIE GALLOO.

B. L., 1892, (University of Michigan).

Académie de Paris, Brevet, 1881, Sorbonne, 1884, (University of France).

A. M., 1895, (University of Kansas).

Professor of Romance Languages and Literatures, 1900; 1892.

(27 F.) 1324 Louisiana St.

WILBUR CORTEZ ABBOTT.

A. B., 1892, A. M., 1903, (Wabash College).

B. Litt., 1897, (Oxon.)

Professor of European History, 1902.

(G.) 1116 Louisiana St.

WILLIAM LIVESEY BURDICK.

A. B., 1882, A. M., 1884, (Wesleyan).

Ph. D., 1885, (Grant).

LL. B., 1898, (Yale).

Professor of Law, 1902; 1898.

(G.) Jackson Block.

CHARLES SANFORD SKILTON.

A. B., 1889, (Yale).

Dean of the School of Fine Arts, and Professor of Musical Theory and Organ, 1903.

(N.) 947 Louisiana St.

CHARLES EDWARD HUBACH.

(Graduate of the New England Conservatory of Music; Sbriglia, Paris.)

Professor of Voice, 1903.

(N.) 1232 Louisiana St.

JOHN ELOF BOODIN.

A. B., 1895, A. M., 1896, (Brown).

PH. D., 1899, (Harvard).

Professor of Philosophy, 1904.

(12 F.) 1026 Ohio St.

IDA HENRIETTA HYDE.

B. S., 1891, (Cornell).

PH. D., 1896, (Heidelberg, Germany).

Professor of Physiology, 1905; 1899.

(M.) 1229 Tennessee St.

WILLIAM HAMILTON JOHNSON.

A. B., 1885, A. M., 1892, (University of Kansas).

Professor of Education, 1905, and *High-school Visitor*, 1903.

(3 F.) 1201 Oread Ave.

HENRY BYRON NEWSON.

B. S., 1883, PH. D., 1892, (Ohio Wesleyan).

Professor of Mathematics, 1905; 1890.

(24 F.) 1702 Massachusetts St.

GEORGE HOWARD HOXIE.

A. B., 1893, A. M., 1896, (Union University).

M. D., 1901, (University of Zurich).

Professor of Internal Medicine, and *Dean of the Clinical Department of the School of Medicine*, 1905; 1902.

Rosedale, Kan.

BRUCE VICKROY HILL.

PH. D., 1902, (Berlin).

Acting Professor of Physics and Electrical Engineering, 1905.

(2d floor, B.) 625 Ohio St.

JAMES NAISMITH.

A. B., 1887, (McGill University).

M. D., 1898, (Gross Medical College).

Professor of Physical Education, and *Chapel Director*, 1906; 1898.

(R. G.) 1635 Massachusetts St.

MARSHALL ALBERT BARBER.

A. B., 1891, (University of Kansas).

A. M., 1894, (Harvard).

Professor of Bacteriology and Pathology, and *Director of the Clinical Laboratories*, 1906; 1895.

Rosedale, Kan.

SAMUEL JOHN HUNTER.

A. B., 1893, A. M., 1893, (University of Kansas).

Professor of Entomology, 1906; 1896.

(6 and 7 S.) 1309 Ohio St.

WILLIAM EDWARD HIGGINS.

B. S., 1888, LL. B., 1894, (University of Kansas).

Professor of Law, 1906; 1899.

(G.) 1238 Ohio St.

CLARENCE ERWIN McCLUNG.

PH. G., 1892, A. B., 1896, A. M., 1898, PH. D., 1902, (University of Kansas).

Professor of Zoölogy, 1906; 1897.

(2d floor, S.) 1209 Ohio St.

PERLEY F. WALKER.

B. M. E., 1896, (University of Maine).

M. M. E., 1901, (Cornell).

Professor of Mechanical Engineering, 1906; 1905.

(Sh.) 125 Park St.

MERVIN TUBMAN SUDLER.

PH. D., 1899, (Johns Hopkins).

M. D., 1901, (College of Physicians and Surgeons, Baltimore).

Dean of the Scientific Department of the School of Medicine, and Professor of Anatomy and Gynecology, 1906; 1905.

(M.) 1037 Tennessee St.

ROBERT KENNEDY DUNCAN.

A. B., 1892, (Toronto).

Professor of Industrial Chemistry, 1906.

(C.) 1237 Tennessee St.

 ADJUNCT PROFESSORS.

LUCIEN IRA BLAKE, A. B., PH. D.

Chief Consulting Engineering of the Submarine Cable Company, Boston, Mass.

Adjunct Professor in the Department of Physics, 1906.

GEORGE HERBERT PALMER, A. M., LITT. D., LL. D.

Alford Professor of Natural Religion, Moral Philosophy and Civil Polity in Harvard University, Cambridge, Mass.

Adjunct Professor in the Department of Philosophy, 1906.

CHARLES SEDGWICK MINOT, S. D., LL. D., D. Sc.

James Stillman Professor of Comparative Anatomy in the
Harvard University Medical School, Cambridge, Mass.

Adjunct Professor in the Department of Zoölogy, 1906.

NORMAN DUNCAN.

Formerly Wallace Professor of Rhetoric and Oratory in
Washington and Jefferson College, Washington, Pa.

*Adjunct Professor in the Department of English Language
and Rhetoric, 1906.*

ASSOCIATE PROFESSORS.

MILES WILSON STERLING.

A. B., 1883, A. M., 1893, (University of Kansas).

Associate Professor of Greek, 1901; 1883.

(18 F.) 1129 Louisiana St.

RAPHAEL DORMAN O'LEARY.

A. B., (University of Kansas, 1893; Harvard, 1895).

Associate Professor of English, 1901; 1896.

(22 F.) 1106 Louisiana St.

HANNAH OLIVER.

A. B., 1874, A. M., 1888, (University of Kansas).

Associate Professor of Latin, 1905; 1890.

(17 F.) 802 Tennessee St.

ELMER FRANKLIN ENGEL.

A. B., 1892, (University of Kansas).

A. M., 1898, (Harvard).

Associate Professor of German 1905; 1892.

(28 F.) 1211 Kentucky St.

SAMUEL CHARLES EMLEY.

A. B., 1899, (University of Kansas).

M. D., 1902, (Rush Medical College).

Associate Professor of Pathology, 1905.

(S.) 1302 Tennessee St.

CHARLES MOREAU HARGER.

L. H. D., 1901, (Bethany).

Director and Lecturer, Course in Journalism, 1905.

Abilene, Kan.

SELDEN LINCOLN WHITCOMB.

A. B., 1887, (Iowa College).

A. M., 1893, (Columbia).

Associate Professor of English Literature, 1905.

(22 F.) 1026 Ohio St.

HAMILTON PERKINS CADY.

A. B., 1897, PH. D., 1903, (University of Kansas).

Associate Professor of Chemistry, 1905; 1899.

(C.) 1600 Kentucky St.

FRANK JOHNSON HALL.

M. D., 1897, (Kansas City Medical College).

Associate Professor of Clinical Pathology, and Director of the Pathological Laboratory, 1905.

Rosedale, Kan.

EDGAR GEORGE FRAZIER.

PH. B., 1900, (Tabor), 1901, (University of Chicago).

Associate Professor of Public Speaking and Debate, 1905; 1901.

(25, 5th floor, F.) 407 W. Hancock St.

WILLIAM UNDERHILL MOORE.

A. B., 1900, A. M., 1901, LL. B., 1902, (Columbia).

Associate Professor of Law, 1906.

(G.) 401 W. Pinckney St.

MARTIN EVERETT RICE.

B. S., 1891, M. S., 1893, (University of Kansas).

Associate Professor of Physics and Electrical Engineering, 1906; 1892.

(1st floor, B.) 1223 Vermont St.

RALPH WALDO CONE.

A. B., 1895, (University of Kansas).

A. M., 1897, (Harvard).

Associate Professor of Sociology and Economics, 1906; 1899.

(13 F.) R. F. D. No. 9.

L. D. HAVENHILL.

PH. C., 1893, PH. M., 1894, (University of Michigan).

B. S., 1903, (University of Kansas).

Associate Professor of Pharmacy, 1906; 1899.

(42 C.) 1609 Vermont St.

WILLIAM CHRISTIAN HOAD.*

B. S., 1898, (University of Kansas).

Associate Professor of Civil Engineering, 1906; 1900.

(32 F.) 1540 Kentucky St.

*Absent on leave, 1906-'07.

JOHN NICHOLAS VAN DER VRIES.

A. B., 1896, A. M., 1899, (Hope).

Ph. D., 1901, (Clark).

Associate Professor of Mathematics, 1906; 1901.

(23 F.) 832 Kentucky St.

RALPH EMERSON BASSETT.

A. B., 1889, A. M., 1890, (Harvard).

Associate Professor of Romance Languages, 1906; 1903.

(27 F.) 746 Ohio St.

HERBERT ALLAN RICE.

C. E., 1897, (Ohio State University).

Associate Professor of Civil Engineering, 1905.

(35 F.) 1235 Tennessee St.

B. J. DALTON.

B. C. E., 1890, (University of Kansas).

Acting Associate Professor of Civil Engineering, 1906.

(32 F.) 1121 Rhode Island St.

CLINTON MASON YOUNG.

B. S. in Mining, 1904, (Case).

Associate Professor of Mining Engineering, 1906.

(Basement, F.) 1332 Vermont St.

RAYMOND A. SCHWEGLER.

A. B., (Brown).

Associate Professor of Education, 1907.

 ASSISTANT PROFESSORS.

FRANK EMERSON WARD.

(State Normal, Indiana.)

*Superintendent of Fowler Shops and Shop Instruction,
1899; 1889.*

(Sh.) 1236 Oread Ave.

ARCHIBALD HOGG.

A. B., 1894, LL. B., 1896, (University of Kansas).

Assistant Professor of Philosophy, 1899.

(12 F.) 1227 Ohio St.

ALMA LE DUC.

Ph. B., 1899, (University of Chicago).

Assistant Professor of Romance Languages, 1900.

(27 F.) 1309 Ohio St.

CHARLES MORGAN STERLING.

A. B., 1897, (University of Kansas).

Assistant Professor of Pharmacognosy, 1901.

(41 C.) 923 Indiana St.

ALBERTA LINTON CORBIN.

A. B., 1893, (University of Kansas).

Ph. D., 1902, (Yale).

Assistant Professor of German, 1901.

(28 F.) 1108 Ohio St.

FREDERICK NEWTON RAYMOND.

A. B., 1896, (University of Kansas).

A. M., 1897, (Columbia).

Assistant Professor of English, 1901.

(22 F.) 811 Mississippi St.

MARGARET LYNN.

B. S., 1889, (Tarkio).

A. M., 1900, (University of Nebraska).

Assistant Professor of English, 1901.

(22 F.) 1108 Ohio St.

RICHARD McNAMEE FREEMAN.

E. E., 1900, (Lehigh).

Assistant Professor of Electrical Engineering, 1901.

(Sh.) 642 Louisiana St.

CARL LOTUS BECKER.

B. L., 1896, (University of Wisconsin).

Assistant Professor of European History, 1902.

(11 F.) 1134 Mississippi St.

FRANK EGBERT BRYANT.

B. L., 1899, A. M., 1901, (University of Michigan).

Assistant Professor of English, 1902.

(22 F.) 1201 Tennessee St.

GEORGE JUSSEN HOOD.*

B. S., 1902, (University of Kansas).

Assistant Professor of Mechanical Drawing, 1902.

DAVID FORD McFARLAND.

A. B., 1900, A. M., 1901, (University of Kansas).

M. S., 1903, (Yale).

Assistant Professor of Chemistry, 1903; 1900.

(C.) 929 Connecticut St.

*Absent on leave, 1906-'07.

ARTHUR JEROME BOYNTON.

A. B., 1901, (Harvard).

A. M., 1902, (Columbia).

Assistant Professor of Sociology and Economics, 1903.

(13 F.) 1104 Tennessee St.

CHARLES HAMILTON ASHTON.

A. B., 1887, (Union).

A. M., 1893, (Harvard).

Assistant Professor of Mathematics, 1903.

(24 F.) 1202 Ohio St.

GEORGE FREDERICK KAY.

B. S., A. M., 1902, (Toronto).

Assistant Professor of Geology and Mineralogy, 1904.

(Basement, F.) 1333 Ohio St.

ROBERT WILLIAM CURTIS.

A. B., 1896, (Trinity).

PH. D., 1904, (Yale).

Assistant Professor of Chemistry, 1904.

(C.) 1311 Tennessee St.

ALBERT KEMP HUBBARD.

PH. B., 1901, (Yale).

Assistant Professor of Civil Engineering, 1904.

(32 F.) 1227 Ohio St.

CHARLES IVES CORP.

B. S., 1903, (University of Kansas).

Assistant Professor of Mechanical Engineering, 1904.

(Sh.) 114 W. Lee St.

EDWIN FISKE STIMPSON.

B. S., 1890, (University of Kansas).

Assistant Professor of Physics, 1905; 1901.

(B.) 926 Indiana St.

MARY COOLIDGE FISH.

(Sargent Normal School of Physical Training.)

Assistant Professor of Physical Education, 1905; 1903.

(Basement, S.) 1215 Oread Ave.

LOUIS EUGENE SISSON.

A. B., 1904, (Leland Stanford).

Assistant Professor of Rhetoric, 1905; 1904.

(22 F.) 1126 Kentucky St. —

WILLIAM JACOB BAUMGARTNER.

A. B., 1900, A. M., 1901, (University of Kansas).

Assitant Professor of Zoölogy and Histology, 1905; 1904.

(S.) 1304 Massachusetts St.

HENRY OTTO KRUSE.

A. B., 1894, A. M., 1903, (University of Kansas).

Assistant Professor of German, 1905; 1904.

(28 F.) 1540 Kentucky St.

ELISE NEUEN SCHWANDER.

A. B., 1898, (University of Kansas).

Assistant Professor of Romance Languages, 1905.

(27 F.) 1324 Louisiana St.

WILLIAM CLARENCE LANSDON.

A. B., 1888, (Kansas Normal College).

Manager of Athletics, 1905.

(R. G.) 709 Mississippi St.

CHARLES HENRY GRAY.

B. L., 1895, M. L., 1896, (University of Michigan).

PH. D., 1904, (University of Chicago).

Assistant Professor of Rhetoric, 1905.

(22 F.) 1131 Ohio St.

WALLACE NOTESTEIN.

A. B., 1900, (Wooster).

A. M., 1903, (Yale).

Assistant Professor of European History, 1905.

(11 F.) 1201 Oread Ave.

FRANCIS WILLIAM BUSHONG.

A. B., 1885, A. M., 1888, (Franklin and Marshall).

S. D., 1900, (College of Emporia).

Assistant Professor of Chemistry, 1905.

(C.) 1609 Vermont St.

HERBERT HUNTER VAUGHAN.

A. B., 1903, (University of Michigan).

PH. D., 1906, (Harvard).

Assistant Professor of Romance Languages, 1905.

(27 F.) 1131 Ohio St.

JAMES DYNAN NEWTON.

A. B., 1891, A. M., 1895, (Holy Cross).

M. E., 1895, (Cornell).

Assistant Professor of Civil Engineering, 1906.

(32 F.) 713 Rhode Island St.

HERBERT WILLIAM EMERSON.

PH. C., 1901, B. S., 1902, (University of Michigan).

Assistant Professor of Pharmacy, 1906; 1903.

(25 C.) 1401 Kentucky St.

SOL E. HUTTON.*

E. E., 1903, (Highland Park College).

Assistant Professor of Mechanical Drawing, 1906.

1146 Ohio St.

SHERWOOD HINDS.*

B. S., 1905, (Michigan Agricultural College).

Assistant Professor of Civil Engineering, 1906.

CHARLES COCHRAN.

(University of Colorado.)

Assistant Professor of Mechanical Drawing, 1906.

1117 Tennessee St.

LEON NELSON FLINT.

A. B., 1897, (University of Kansas).

Lecturer in Journalism, 1906.

(3 and 5 F.) Cor. Missouri and Quincy Sts.

MARY I. McFADDEN.

PH. B., (University of Wisconsin).

Acting Assistant Professor of Education, 1907.

(13 F.) 929 Connecticut St.

INSTRUCTORS.

GEORGE WILLIS HANSON.

Forge and Foundry Instructor, 1899. (Sh.) R. F. D. No. 10.

HARRIET GREISSINGER.

MUS. B., 1895, (University of Kansas).

Instructor in Piano, 1902.

(N.) 1108 Ohio St.

EUGENE SMITH.

M. D., 1876, (Rush).

Demonstrator in Anatomy, 1903.

(Basement, M.) 736 Kentucky St.

*Appointed for one year.

FRANK EVERETT JONES.

(Armour Institute).

Instructor in Carpentry and Pattern-making, 1903.

(Sh.) West of City Limits.

LULU GARDNER.

A. B., 1905, (University of Kansas).

Instructor in English Literature, 1905; 1903.

(22 F.) 1325 Tennessee St.

WILLIAM KIRK TRIMBLE.

M. D., 1900, (Kansas City Medical College).

Instructor in Clinical Pathology, 1905.

Rosedale, Kan.

HELEN PHIPPS.

(American Conservatory of Music).

Instructor in Violin, 1905.

(N.) 714 Rhode Island St.

JAMES ANDREW CAMPBELL.

A. B., 1901, A. M., 1906, (University of Michigan).

Instructor in German, 1906.

(28 F.) 1717 Ohio St.

RICHARD THEODORE HARGREAVES.

A. B., 1902, (University of Kansas).

Instructor in Latin, 1906.

(17 F.) 1104 Tennessee St.

ALPHA GARRETT WRIGHT CHILDS.

A. M., 1899, (Franklin College).

M. D., 1900, (Chicago Homeopathic College).

Instructor in Physiology, 1906.

Southeast of City Limits.

ULYSSES GRANT MITCHELL.

A. B., 1898, (Central Normal College).

A. M., 1907, (University of Kansas).

Instructor in Mathematics, 1906.

(24 F.) 1708 Massachusetts St.

ARTHUR DUNN PITCHER.

A. B., 1906, A. M., 1907, (University of Kansas).

Instructor in Mathematics, 1906. (24 F.) 945 Vermont St.

ASSISTANT INSTRUCTORS.

BLANCHE LYONS.

(New England Conservatory of Music.)

Assistant Instructor in Voice, 1904.

(D.) 936 New Hampshire St.

MAUDE BEATRICE COOKE.

(University of Kansas.)

Assistant Instructor in Piano, 1904.

(D.) 1100 Vermont St.

MAUD MILLER.

Mus. B., 1898, (University of Kansas).

Assistant Instructor in Piano, 1904. (D.) 1108 Ohio St.

JULIA RIGHTER.

Mus. B., 1897, (University of Kansas).

Assistant Instructor in Piano, 1904.

(D.) 1132 Tennessee St.

LOUISE WIEDEMANN.

Mus. B., 1897, (University of Kansas).

Assistant Instructor in Piano, 1904.

(D.) 835 Massachusetts St.

AUGUSTA FLINTOM.

Mus. B., 1902, (University of Kansas).

Assistant Instructor in Voice, 1905. (D.) 745 Ohio St.

LARRY M. PEACE.

A. B., 1901, (University of Kansas).

Preparator and Demonstrator in the Botanical Laboratory,
1902.

(S.) 1111 Mississippi St.

HANDEL T. MARTIN.

Assistant Curator of Paleontology, 1907; 1899.

(Mu.) 745 Arkansas St.

NADINE NOWLIN.

A. B., A. M., 1903, (University of Kansas).

Assistant Instructor in Zoology. (S.) 1209 Ohio St.

THOMAS BARTLETT FORD.

A. B., 1904, (University of Kansas).

Assistant Instructor in Chemistry.

(C.) 1638 New Hampshire St.

LALIA VIOLA WALLING.

A. B., 1905, A. M., 1907, (University of Kansas).

Laboratory Assistant in Physiology, 1905.

(M.) 945 Kentucky St.

CLAUDE DEMING.

A. B., 1905, (University of Kansas).

A. M.

Assistant Instructor in American History, 1906.

(14 F.) 1128 Ohio St.

RICHARD EVERINGHAM SCAMMON.

A. B., 1904, A. M., 1906, (University of Kansas).

Assistant Instructor in Zoölogy, 1906.

(S.) 1037 Tennessee St.

EDWARD MAURICE BRIGGS.

A. B., 1904, (University of Nebraska).

Assistant Instructor in German, 1906.

(28 F.) 705 Tennessee St.

CHARLES D. BUNKER.

Museum Assistant in Zoölogy, 1905.

(Mu.) 1717 Vermont St.

ELMER BIRDELL GIFT.

Assistant in Education, 1906.

1317 Ohio St.

LIBRARIAN AND ASSISTANTS.

CARRIE M. WATSON.

A. B., 1877, (University of Kansas).

Librarian, 1887.

(L.) 1310 Louisiana St.

EDITH M. CLARKE.

A. B., 1895, (University of Kansas).

Cataloguer, 1904.

(L.) 1210 Ohio St.

CLARA SCIOTO GILLHAM.

A. B., 1884, (University of Kansas).

Loan Desk Assistant, 1904.

(L.) 1411 Tennessee St.

MARY MAUD SMELSER.

Accession Assistant, 1904.

(L.) 940 Kentucky St.

DORA CATHERINE RENN.

Reference Assistant, 1899.

(L.) 1310 Louisiana St.

KATE ELIZABETH DINSMOOR.*

A. B., 1903, (University of Kansas).

Reference Assistant, 1905.

(L.) 201 Maine St.

PAULINE MADDEN.

Reference Assistant, 1906.

(L.) 1345 Tennessee St.

BUSINESS AND EXECUTIVE OFFICERS.

EDWARD E. BROWN.

Secretary and Purchasing Agent, 1907; 1894.

(9 F.) 615 Tennessee St.

GEORGE O. FOSTER.

A. B., 1901, (University of Kansas).

Registrar of the University, 1899; 1891.

(9 F.) 1245 Louisiana St.

EBEN F. CROCKER.

Superintendent of Buildings and Grounds, 1902.

(Basement, F.)

EARL B. CRONEMEYER.

Accountant, 1907.

(9 F.) 1108 Connecticut St.

MINNIE STELLA MOODIE.

Secretary to the Chancellor, 1902.

(4 F.) Southeast Lawrence.

E. MAUDE KIBBEY.

A. B., 1895, (William Woods College).

Assistant Registrar, Clinical Department, School of Medicine, 1906.

Rosedale, Kan.

*Absent on leave, 1906-'07.

FELLOWS AND SCHOLARS.

NORA B. GENTRY.

A. B., 1902, (Bethany College).

Fellow in English Literature, 1906.

GEORGE FRED ZOOK.

A. B., 1906, (University of Kansas).

Fellow in European History, 1906.

FRANK GEPHART.

A. B., 1906, (University of Kansas).

Fellow in Chemistry, 1906.

RARA MARGARET BENN.

A. B., 1907, (University of Kansas).

Fellow in French, 1906.

GUSTAF NYQUIST.

A. B., 1901, (Bethany College).

A. M., 1907, (University of Kansas).

Fellow in Sociology, 1906.

WILLIAM ALFRED STARIN.

A. B., 1906, (University of Kansas).

Fellow in Botany, 1906.

HELEN M. CLARKE.

A. B., 1903, A. M., 1907, (University of Kansas).

Fellow in Philosophy, 1906.

ELLA WEEKS.

A. B., 1901, (University of Kansas).

Sara T. D. Robinson Research Scholar at Marine Biological Laboratory, Woods Hole, Mass., 1906.

CORA EMMETT DOLBEE.

Marcella Howland Memorial Scholar, 1906.

RUBY JACKSON.

Lucinda Smith Buchan Memorial Scholar, 1906.

MABEL EGGLESTON.

Association of Collegiate Alumnae Scholar, 1906.

PART II.

THE UNIVERSITY.

(37)

THE UNIVERSITY.

ORGANIZATION.

The work of the University is comprehended in the schools and departments mentioned below. Everything pertaining to the University organization is under the control of the Board of Regents. Each school and department is also under the control of the Chancellor and a separate faculty of instruction.

DEPARTMENTS OF INSTRUCTION.

- I.—The Graduate School.
- II.—The College of Liberal Arts and Sciences.
- III.—The School of Engineering.
 - 1. The Civil Engineering Course.
 - 2. The Electrical Engineering Course.
 - 3. The Mechanical Engineering Course.
 - 4. The Mining Engineering Course.
 - 5. The Chemical Engineering Course.
- IV.—The School of Law.
- V.—The School of Fine Arts.
 - 1. The Course in Piano Playing.
 - 2. The Course in Organ Playing.
 - 3. The Course in Violin Playing.
 - 4. The Course in Violoncello Playing.
 - 5. The Course in Voice Culture.
 - 6. The Course in Drawing and Painting.
 - 7. The Course in Elocution.
- VI.—The School of Pharmacy.
 - 1. The Short Course in Pharmacy.
 - 2. The Three-year Course in Pharmacy.
 - 3. The Collegiate Course in Pharmacy.
- VII.—The School of Medicine.
- VIII.—The Summer Session.

Institutions Connected with the University and under its Control.

- IX.—The Library.
- X.—The Gymnasium.
- XI.—The Museums.
- XII.—The University Geological Survey.
- XIII.—The High-school Visitation.

THE GRADUATE SCHOOL. In the College of Liberal Arts and Sciences and the School of Engineering there are advanced courses leading to the degrees of master of arts and master of science, doctor of philosophy, and the higher engineering degrees. These courses have been organized into a Graduate School, open to graduates of this and, under certain conditions, other universities and colleges.

THE COLLEGE OF LIBERAL ARTS AND SCIENCES. The College of Liberal Arts and Sciences offers instruction in literature, science, and the arts, leading to the degree of bachelor of arts. It is the central department of the University and the foundation upon which all the rest are built. In it are included many of the courses offered in the other departments of the University, and there is no distinct separation of faculties, nearly all being included in the Faculty of the College of Liberal Arts and Sciences. The courses of study are mainly elective and presume four years of residence work.

THE SCHOOL OF ENGINEERING offers courses in civil, electrical, mechanical, mining and chemical engineering, leading to the degree of bachelor of science, requiring four years of residence work.

THE SCHOOL OF LAW offers three years of legal instruction, leading to the degree of bachelor of laws.

THE SCHOOL OF FINE ARTS offers courses in piano, organ, violin and violoncello playing, voice culture, drawing, painting, and elocution.

THE SCHOOL OF PHARMACY offers two, three and four years' work in pharmaceutical study.

THE SCHOOL OF MEDICINE offers a complete four-year medical course. The work of the first two years is done in the laboratories at the University. The work of the second two years is done in the clinical laboratories at Rosedale.

THE SUMMER SESSION (six weeks) is intended to meet the wants of teachers and others who wish to pursue collegiate study but are unable to attend the regular sessions of the University. Collegiate credit is allowed for certain courses offered.

THE LIBRARY. The library of the University is regarded as the center of the instructional life of the University. It is used to supplement the instruction in all departments, and also for wide reading for purposes of general information by students of the University.

THE GYMNASIUM. The gymnasium is the center of the physical education of the students in general, and also of the athletics of the University.

THE MUSEUMS. The museums are used for the storing of collections valuable from a scientific point of view, and also for the purpose of supplementing the scientific instruction of the University.

THE GEOLOGICAL SURVEY. The Geological Survey is connected with the University only by the fact that the director, superintendent and chemist are officers in the University. The work is done by these officers, and especially by the superintendent, with whom almost the entire management rests, without extra compensation. It is regarded as work which the University should do for the state, and the appropriation for the survey is used entirely for the ordinary expenses of the survey.

THE HIGH-SCHOOL VISITATION. In order that the University may fulfil its function as the head of the public-school system of the state, it becomes necessary for it to maintain this position by means of an organic relation to the parts. To this end, a regular University officer, known as the High-school Visitor, devotes his entire time to visiting the high schools, for the purpose of consulting with principals and superintendents, and suggesting courses of study and equipment necessary to increase the efficiency of the schools and make of them consistent educational instruments in the life of the state.

GOVERNMENT.

The legislature of 1889 passed an act providing for the government of the University and repealing all former legislation bearing upon the same subject. This act declares that the government of the University shall be vested in a board of seven Regents, six of whom shall be appointed by the governor and confirmed by the senate, and whose term of office shall be four years; that the Board of Regents shall be a body corporate, under the name of "The Regents of the University of Kansas," and as such may sue and be sued, make contracts, and hold and transfer property, both real and personal, for the University.

The Board of Regents is also invested with the power to elect a Chancellor, who shall be the chief officer of the University, and president of the Board of Regents, with the full power of a regent; to appoint professors, assistants, tutors; to increase and diminish their number as the interest of the University may require; to em-

ploy officers and employees, as in their judgment the needs of the University require.

The Board is also empowered to confer such degrees and grant such diplomas as are usually conferred and granted by institutions of learning.

DISCIPLINE.

That the generosity of the state may not be abused, and that perfect justice may be done all who are earnestly striving to make the best possible use of the opportunities offered, there is but a single requirement, *unexceptional deportment and strict attention to University duties.*

THE UNIVERSITY AND THE STATE.

The University of Kansas is an integral part of the free public-school system of the state. It was established by an act of the legislature of 1864, and its object, as defined by that act, is to "provide the inhabitants of the state with the means of acquiring a thorough knowledge of the various branches of literature, science, and the arts." In realizing the object thus set for it, the University stands in direct connection with the high schools of the state. It begins where the high school ends, and thus completes, for so many as avail themselves of the advantages, the thorough education which the state endeavors to provide. Persons who have completed, in any high school or other institution of learning, the work required in preparation for the University, are admitted to its privileges without examination. For this reason the high schools and academies of the state have in general arranged their courses of study in accordance with the University requirements. Though the University was established and is maintained, primarily, for the sons and daughters of Kansas, it also opens its doors, at very moderate tuition, to the young men and women of other states.

At the head of the public educational system of Kansas, the University endeavors to encourage whatever may contribute to the higher intellectual and moral interests of the state. Believing that the strength and value of the University are measured by its service to the state at large, and wishing to reach as many of the citizens as possible in a helpful and stimulating way, the authorities cordially invite all who desire to pursue courses of study or investigation to connect themselves with the University. All who are seeking special information or self-culture and the highest type of citizen life and influence should feel that, by the generosity of the state, advice and information are freely placed at their command.

HISTORY AND LOCATION.

The idea of a State University in Kansas dates from the early days of Kansas territorial government. Each of the constitutions adopted for the territory of Kansas during the period of its memorable struggles provided for the establishment of an institution of higher learning, to be supported by public funds. The last of these, which became, on the admission of Kansas to the Union, the constitution of the state, declares that "provision shall be made by law for the establishment, at some eligible and central point, of a State University, for the promotion of literature and the arts and sciences."

By an act of Congress, approved January 29, 1861, the day on which Kansas was admitted to statehood, seventy-two sections of land were set apart and reserved for the use and support of a State University. The state accepted the trust, and in 1863 the legislature selected the city of Lawrence as the location for the institution. One year later the legislature passed an act organizing the University and giving to it the name of "The University of Kansas." A charter was immediately drawn up, and the government of the institution was vested in a Board of Regents, appointed by the governor.

The Board thus appointed held its first meeting on March 21, 1865, and decided to open a preparatory department as soon as the citizens of Lawrence should provide rooms for that purpose. This the citizens undertook to do, and by the middle of September, 1866, they were enabled, by the aid of gifts from various individuals and organizations, to erect the building now known as North College. The first Faculty of the University had been elected by the Board of Regents in July of the same year, and on the 12th of September the University was opened to the young men and women of the state.

In 1876 the legislature of the state established a normal department, which, though successful, was discontinued in 1885. The Law School was opened in October, 1878, and the School of Pharmacy was established in 1885. A course in engineering was arranged as early as 1873, but remained a part of the collegiate department until 1891, when the School of Engineering was organized and the collegiate department became known as the School of Arts. During the same year the preparatory department was discontinued, and the departments of music and art were combined to form the School of Fine Arts. The Graduate School was organized in 1896; and in 1899 the preparatory medical course, which had been offered in the collegiate department since 1880, was extended into a

regular medical course, constituting the work of the School of Medicine. In 1904 the Board of Regents changed the name of the School of Arts to the College of Liberal Arts and Sciences.

Rev. R. W. Oliver, the first Chancellor of the University, resigned his position after one year of service, and was succeeded by Gen. John Fraser. In 1874 Dr. James Marvin was made Chancellor. His resignation, in 1883, was followed by the election of Dr. Joshua A. Lippincott. Prof. Francis H. Snow, who had been a member of the Faculty from the beginning, was elected Chancellor in 1889. In 1901, on account of failing health, Chancellor Snow resigned. Mr. W. C. Spangler, a graduate of the University and a member of the Board of Regents, was appointed to act as Chancellor until the election of a regular incumbent. Frank Strong, Ph. D., was elected in April, 1902, and assumed the office August 1 of that year.

The University is situated on a projection of the bluffs bordering the Kansas river valley, known as Mount Oread. The view from the campus and buildings includes a broad and varied expanse of valley and upland, dotted with evidences of the productiveness of the soil and the thrift of the people.

Lawrence is a city of about 12,000 inhabitants, and is situated forty miles west of Kansas City. It is a healthful city, and offers many advantages as a place of residence for those desiring the benefits afforded by the University.

BUILDINGS AND GROUNDS.

The University campus comprises 163.5 acres at Lawrence and 7.5 acres in the campus of the Medical School, at Rosedale. There are fifteen University buildings, ten of which were erected by the state and five by private gifts. Thirteen of these buildings are used for the purposes of instruction, the remaining two being the heating plant and the Chancellor's residence.

NORTH COLLEGE.

This structure was the first building to be erected. It is fifty feet square, three stories high, and contains eighteen rooms. It was completed in 1866, from which time until 1872 the entire work of the University was carried on within its walls. In 1872 Fraser Hall was completed, and North College was for a time closed. In 1890 it was again opened, and, until the end of the school year 1889-'94, was used by the School of Law. It is at present used by the School of Fine Arts.

FRASER HALL.

This building was erected in 1872, better to accommodate the growing school and to relieve the crowded rooms of North College. It is 246 feet in extreme length, 98 feet wide in center, wings 62 feet each. There are fifty-four rooms in this building, of which one, the main audience room, containing an electric pipe-organ, is 94 feet long and 56 feet wide. This room has a seating capacity of 1200. There are also in Fraser Hall eighteen lecture-rooms, each large enough to accommodate classes of seventy-five to eighty students. In this building are located the executive offices of the University, including the Chancellor's office, the office of the Secretary, and the office of the Registrar. The building is named in honor of Gen. John Fraser, the first active Chancellor of the University.

MEDICAL HALL.

This building is a structure in the form of a T, the main part, extending east and west, being 80 by 35 feet, and the L north of this 40 feet square. The basement is used for work in anatomy. The large, well-lighted room of the second floor is the physiological laboratory. The east wing of this floor is occupied as a lecture-room, and is capable of seating seventy-five students. Other rooms are used for private laboratories, library, etc.

SNOW HALL.

This structure was erected in 1886, from a \$50,000 appropriation by the legislature. It is 110 feet in length by 100 feet wide, two stories in height, each 16 feet in the clear, is provided with an attic of 12 feet, and with a basement almost entirely above ground. The geological department occupies the two southeast rooms of the first floor. The departments of zoology and botany occupy the large west room of the first floor for laboratory purposes. The entire second floor is devoted to laboratories for advanced work in botany and zoology. The west room of the attic is used for the geological collections. The south room is the botanical museum. The department of drawing and painting occupies the remainder of the attic. On the first floor of the east half is the lecture-room, extending through the basement and first story, and arranged in amphitheater style. This room has accommodations for 200 students. The building is named in honor of Professor and ex-Chancellor Francis Huntington Snow.

SPOONER LIBRARY.

This building was erected in 1894, at a cost of \$75,000, by the generosity of William B. Spooner, of Boston. Its length is 112 feet and extreme width 50 feet. The building is two stories high, with a basement, the greater part of which is above ground. On the first or main floor are located the general reading-room, a newspaper room, and the Librarian's and Cataloguer's offices. The reading-room is admirably arranged and lighted. In the newspaper room are kept the county and city weeklies and dailies published within the state. In addition, dailies published in all the larger cities of the United States are kept on file. The second floor of the building is also devoted to library purposes. In the basement are semi-nary rooms used for private study of students in the various departments. The building is lighted throughout by electricity. Its every appointment is modern and its facilities and usefulness unexcelled.

BLAKE HALL.

This is of Chateau Renaissance style, three stories high, of Cleveland, Ohio, sandstone, and was completed September, 1895, at a cost of \$58,000. Besides a general lecture-room seating 100 and two classrooms seating 30 each, and a department reading-room and library, there are two general laboratory rooms, covering 3200 square feet. Accessible to these are supply, battery, workshop, balance and chemical rooms. There are also eight smaller rooms specially adapted for physical research, each provided with water, gas, and electricity, and each basement laboratory room has a stone pier, to bed-rock, giving instrument supports free from vibrations of the building. Heavy electrical currents are so numerous and so planned that to almost any laboratory room all electrical currents from the dynamo station may be delivered. A sixty-cell storage battery is continually charged for laboratory work. The building is constructed without iron below the third story, to lessen magnetic disturbances. The general apparatus room contains now about \$30,000 worth of demonstration and laboratory instruments. The building is heated by the Sturtevant forced-draft system, regulated by electric thermostats in each room. The air is changed automatically every fifteen minutes and in the lecture-room every ten minutes. The total amount of floor space for research purposes is 5690 square feet. The building is named for Prof. Lucien Ira Blake.

FOWLER SHOPS.

This building was completed in 1899, at a cost of \$21,000, and is the gift of Mr. George A. Fowler, of Kansas City, Mo., as a memorial of his father. It is devoted to the mechanical and technical instruction of the School of Engineering and to the electric-light and power plants of the University. Its present educational equipment represents about \$30,000, appropriated by the legislature. The building is of native stone, 224 feet long by 50 feet average width, two stories high, with attic and a handsome tower. It encloses 32,000 square feet of floor space for instructional purposes. It contains boiler- and engine-rooms equipped and adapted for boiler and engine testing, with generators aggregating 200 horse-power, for lighting and power for all the University buildings; forge room, metal- and wood-working departments, dynamo and transformer laboratory, fitted with recent types of appropriate machines, so distributed as to give comprehensive and exact technical instruction. Two rooms, 50x30 feet, are devoted to the engineering laboratories of the civil and mechanical departments. The pumping machinery of the water and fire-protection system of the University is also placed in the engine-room.

THE CHEMISTRY AND PHARMACY BUILDING.

This building was completed in 1900 at a cost of \$70,000. The material used is native limestone, laid in horizontal courses, with recessed pointing. The building is arranged specifically for laboratory purposes for the departments of chemistry and pharmacy. The entire length of the building is 187 feet, and the greatest width 70 feet. The ground plan shows a central portion (devoted to offices, private laboratories, supply-rooms, balance-rooms, and smaller recitation-rooms) and two wings. The building is three stories in height, with a basement of the same height as each of the stories above; beneath the basement floor there is an air space of four feet, down to the solid rock on which the foundations are laid. The system of heating and ventilation, which has been arranged with special care, includes a fan blower, run by electric power, which forces tempered air over steam coils and thence into the laboratories and lecture-rooms. The air thus brought into the rooms is carried out by hoods on the sides of the rooms, which are connected with nine-inch tiles, terminating in the chimneys above the roof, each hood being ventilated by an independent flue.

THE NATURAL HISTORY MUSEUM BUILDING.

The spacious building for the museum of natural history, which has been erected at a cost of \$75,000, furnishes a safe and beautiful home for the natural-history collections, estimated to be worth \$300,000. The upper floor is devoted to the collections in entomology and paleontology. The remainder of the building is used for the exhibition of mammals and birds. The offices are occupied by the curator of mammals, birds, and fishes, and the curator of the entomological collections. The workrooms of the taxidermist are in the basement.

GREEN HALL.

This building, erected at a cost of \$65,000, was occupied by the School of Law in the fall of 1905. It is named for Dean James Woods Green. The design is a clean composition in the American renaissance. The central figure, which is also the main approach, is in the form of a portico, having fluted columns enriched with Ionic capitals. These, together with the columns, cornice, and other ornamental parts, are of gray terra-cotta. The body of the structure is of gray pressed brick. The general dimensions of the building are 60 x 120 feet. Entering the building through the front vestibule, which is paved, a few broad steps lead to the main floor, while on either side are ample stairways leading to the basement. On this floor are a large lecture-room, trial-court and study-rooms, toilet- and cloak-rooms. On the next floor are large classrooms, the offices of the Dean and members of the Faculty, and additional cloak-rooms. The second story, which is reached by broad stairways, is practically given over to the library and reading-room, which is about 40 x 116 feet, with a high coved ceiling, giving a free story of nearly twenty-two feet. Adjoining this room, and, in part, directly connected with it, are small study-rooms and private offices. The interior finish of the building above the basement is of quarter-sawed oak, with paneled wainscot in the halls and up the stairs.

THE ROBINSON AUDITORIUM-GYMNASIUM.

The legislature of 1905 appropriated \$100,000 for a building for a gymnasium and auditorium. This building is 178 feet long by 144 feet wide, with an average width of 90 feet, three stories, including the basement. In the basement are arranged locker-rooms, baths, dressing-rooms for the athletic teams, a baseball cage, and a swimming pool. The first story contains a gymnasium floor for men and another for women, a trophy- and reception-room, and offices for the directors of the work for men and women, respect-

ively. The second story contains a clear floor space 70 x 127 feet. A running track is built in the gallery which is placed entirely around this floor. When the apparatus is removed, this floor will be used for auditorium purposes, and will seat 3000 people. Around this auditorium, and opening out from it, are rooms for handball, boxing, wrestling, fencing, a room for special classes, and a Faculty room. The arrangement and equipment of this building are modern in every particular. It is one of the finest gymnasiums in the West.

THE ELEANOR TAYLOR BELL MEMORIAL HOSPITAL

Is the collective term applied to the group of buildings now being erected on the property donated to the University by Dr. Simeon B. Bell, of Rosedale, and named in memory of his wife. The medical pavilion is completed. This consists of a two-story brick building, containing beds for twenty-four medical patients, and a hydrotherapeutic and massage department. There are four single rooms, two small wards, and one large ward. The building has a large convalescents' room, and roomy porches looking out over the Turkey Creek valley and toward Kansas City, Kan. The situation is elevated and pleasant, an ideal home for the sick.

THE CLINICAL LABORATORY.

This forms an intrinsic part of the Eleanor Taylor Bell Memorial Hospital, and is a brick building 50 x 100 feet, of three stories. It has concrete floors and a general fire-proof construction. The teaching laboratory is a room 100 x 30 feet. From this open four small work-rooms for instructors. There are three lecture-rooms, a library, offices for the Dean and Superintendent, and also a morgue and an animal room. This building crowns the hill, and will be surrounded by five or six hospital pavilions, similar to the medical pavilion already built.

THE ENGINEERING BUILDINGS.

The legislature of 1907 appropriated \$150,000 for a civil and mechanical engineering building and equipment; \$50,000 for a mining engineering building, and \$50,000 for additional shops. These buildings will be erected during the biennium 1907-'09.

UNIVERSITY EXERCISES AND ORGANIZATIONS.

UNIVERSITY ALUMNI ASSOCIATION.

THE ALUMNI ASSOCIATION is composed of all persons holding degrees granted by the University, though active membership is limited to those who pay annual dues. An endowment membership is maintained for those who subscribe to the endowment fund. The control of the affairs of the association is in the hands of a board of ten directors. A general secretary is employed, whose office is at the University, and who has charge of the publications of the association, and keeps, so far as possible, a complete record of facts concerning alumni. He also superintends the printing plant owned by the association, from which is issued the *Graduate Magazine*. This magazine is sent to all active members of the association. The regular meetings of the association occur during commencement week of each year, at which time the annual alumni address is delivered at the University by some one from among the alumni.

OFFICERS OF THE ALUMNI ASSOCIATION.

JAMES OWEN, '93, l '95, Cripple Creek, Colo.... *President*.

EDWARD G. BLAIR, '87, Kansas City, Mo..... *Vice-president*.

L. N. FLINT, '97, Lawrence *Secretary*.

GEO. O. FOSTER, '01, Lawrence..... *Treasurer*.

DIRECTORS.—Frank P. Mac Lennan, '75, *President*; Olin Templin, '86; R. D. O'Leary, '93; Rose Morgan, '94; Clyde Miller, '96, l '97; Wilbur Gardner, '95, l '96; Anna Drake McClung, '96; Harry L. Raymond, '86; Harlan F. Graham, '86; Richard T. Hargreaves, '02.

RELIGIOUS.

CHAPEL EXERCISES. Exercises are held in the University chapel every morning from 10 to 10:15. Though attendance is not required of students, all are cordially invited, and the services are made as attractive and profitable as possible. They consist of the doxology, Scripture reading, prayer, a hymn, and occasional addresses by the Chancellor and others. On Friday morning the chapel exercises are held from 10 to 10:30, at which addresses are given by speakers from abroad or by members of the Faculty of the University.

During the academic year of 1906-'07, to May 1, addresses were delivered by Hon. T. B. Murdock, Chancellor Frank Strong, Hon. F. W. March, Hon. R. W. Blue, Rev. Phillips, Senator Getty, Rev. Cecil Stimpson, Pres. J. H. Hill, Mr. Fred Mitchell, Mr. H. J. Haskell, Mr. Oliver Laing, Doctor McQuirk, Prof. F. O. Marvin, Prof. G. H. Palmer, of Harvard, Mr. Harold T. Chase, Dr. Charles S. Minot, of Harvard, Prof. F. E. Bryant, Mr. Ewing Herbert, Hon. F. D. Coburn, Mrs. Cora G. Lewis, Hon. J. W. Gleed, Hon. W. Y. Morgan, Mr. John MacDonald.

On Tuesday mornings addresses were delivered by the following members of the University Faculty: Profs. Mervin T. Sudler, E. H. S. Bailey, W. E. Higgins, P. F. Walker, L. D. Havenhill, W. A. Griffith, C. G. Dunlap, R. W. Cone, J. N. Vander Vries, E. G. Frazier, D. F. McFarland, C. A. Preyer, E. Miller, M. W. Sterling, W. C. Lansdon, W. L. Burdick, F. H. Snow, E. F. Stimpson, C. E. McClung, Hannah Oliver, F. N. Raymond, E. Haworth, F. O. Marvin, P. F. Walker, and Miss Carrie M. Watson; and by Rev. A. A. Tanner, Alton, Ill., Prof. W. K. Prentice, of Princeton, Dean Hart, of Denver, Mr. J. P. Hagerman, Prof. F. W. Kelsey, of Michigan, Prof. C. C. Nutting, of Iowa University, Prof. Jesse Macey, of Iowa College, Dr. S. J. Ford, of Kansas City, Mo., Prof. Frank K. Sanders, of Yale, Mrs. May Bellville Brown, the bishop of South Africa, Mr. John Bender, Mr. G. C. Baldwin, Mr. Dennis J. Sheedy.

UNIVERSITY VESPER SERVICE. On the last Sunday afternoon of each month students and Faculty join in an hour of quiet devotion. The service is largely musical, with a brief address, a simple and vital talk on one of the great questions of life. The music, aside from the congregational singing, is furnished by the Vesper Chorus, conducted by Professor Hubach. The speakers for the past year have been: Chancellor Frank Strong, Dean H. M. Hart, of Denver, Rev. C. P. Connolly, of Leavenworth, Prof. G. H. Palmer, of Harvard University, Prof. J. E. Boodin, Dr. Charles E. Bradt, of Chicago, Prof. H. M. Patton, of Baker University.

YOUNG MEN'S CHRISTIAN ASSOCIATION. The Young Men's Christian Association is an organization composed of 250 Christian men of the University, banded together for the purpose of preserving and advancing the spiritual interests of the institution. This object is attained through the work of the various departments and through the helpful Christian fellowship of the young men in their intercourse with one another. Religious services, to which all the men of the University are cordially invited, are held one Sunday afternoon a month at the Presbyterian church,

and midweek prayer-meetings are held every Thursday evening, for a half-hour after supper, at the association house, 1334 Ohio street. The Sunday afternoon services are rendered especially interesting by the presence of prominent speakers from various parts of the state.

The Bible study department organizes classes in systematic Bible study, under competent instructors, and offers courses of study in the life of Christ, the apostolic church, the Old Testament, and mission study. During the present year twenty-two such classes have been maintained, with 346 men enrolled. Five of these classes are conducted by Prof. W. C. Payne and Dr. F. A. Wilber.

The organization leases a large house, which is the center of association life, and affords excellent opportunities for the work of the social committee. Besides the large public receptions at the opening of each term, this committee arranges for a series of socials, reaching different classes of men in their turn; while the parlors of the house, furnished with a piano and games, are open to the men of the University at all times. The association employs a general secretary, who devotes all his time to association work.

Members of the association meet students at the trains and assist them in finding rooms and boarding-places. The employment bureau will render all assistance possible to students desiring to earn a part of their expenses. There will be sent to any address, on application, a handbook giving valuable information to prospective students. Address the general secretary of the association.

YOUNG WOMEN'S CHRISTIAN ASSOCIATION. The Young Women's Christian Association is an organization composed of 300 young women of the University, united for the attainment of the most perfect development of Christian character among the young women of the institution. The work of the association is divided into ten departments, each in charge of a permanently organized committee. The mid-week religious services of the association are arranged by the devotional committee, which provides able speakers upon subjects of practical interest and value to young women. The missionary committee conducts four classes in the study of missions, and the association, through this committee, assists materially in the support of one of its former members as a Y. W. C. A. secretary in India. There are also eighteen classes in systematic Bible study, pursuing courses in the life of Christ, in Old Testament history, and in Acts and the Epistles.

The association seeks to develop the social as well as the spiritual life of its members. The social committee therefore holds a prominent place in the association work. Receptions to new students are held at the opening of the fall term, and are followed by numerous social gatherings throughout the year. The association employs a general secretary, who gives all of her time to work among the young women.

The members of the association gladly assist young women just entering the University in securing boarding- and rooming-places, and, when desired, employment. The students' handbook, which is published in conjunction with the Young Men's Christian Association, will be sent to any address upon application to Miss Alice Templin, 1025 Missouri street, Lawrence, Kan.

UNIVERSITY RELIGIOUS AND PHILOSOPHICAL UNION. This association aims to unite students and Faculty of all shades of religious belief into one body for the study, discussion and practical working out of religious and philosophical problems. It holds meetings twice a month.

RELATION TO CITY CHURCHES. The churches of Lawrence unite in extending to the University students a cordial invitation to enter with them into Christian fellowship, and endeavor to make them feel that, irrespective of church membership, they are welcome to all the privileges which the church affords. To this end the various churches hold receptions for the students at the beginning of each year, the pastors preach special sermons to the students from time to time, and the young people's societies arrange for social gatherings to which the students are especially invited. There are also organized, in the principal Sunday-schools of the city, special classes for University students, a number of these classes being in charge of University professors.

By these means the students are brought closely in touch with the religious life of Lawrence, which may well be called a city of churches. A religious census of the student body during the past few years shows that an average of eighty-seven per cent. of the students are church adherents, fifty-six per cent. are church members, and a large number are actively engaged in the work of the various churches and organizations connected therewith throughout the city.

THE BIBLE CHAIR. April 1, 1901, the Woman's Board of Missions of the Christian church established a chair of biblical instruction at Lawrence for the benefit of University students. A site was purchased on Mount Oread, adjoining the University campus, where, in a building erected for the purpose, the work is carried on.

There is no organic relation between the Bible chair and University. Its support rests entirely upon private gifts. No fees are charged. The privileges are offered to all students, without regard to their religious affiliations, and the courses are arranged to meet their convenience.

The instruction is non-sectarian. The purpose of the work is to bring students in touch with the book which more than any other has made civilization, and which bears the message best adapted to meet man's moral and spiritual needs.

The courses include studies in both the Old and New Testaments, and the history of missions. The Hebrew language is offered to such as are interested or who are preparing for the ministry. Wallace C. Payne, A. B., A. M., (Bethany College), B. D., (Yale University), occupies the chair. Mrs. W. C. Payne is associated with him.

During the six years now closing, about 1000 students have taken advantage of the opportunity thus given to acquaint themselves more fully with the Bible.

Beginning October 1, 1907, studies will be offered by Professor Payne in the "Life of Christ," "Paul's Life and Letters," "Peter's Life and Writings," and "Old Testament History." Short courses of three to eight lectures will be given on "Israel and the Great Nations of the Past," "The Wisdom Literature of the Old Testament," "The Psalms," "The Old Testament Prophets," "The Man, Christ Jesus," "Teaching of Jesus," "The First Century Church," "The Writings of John," and "The Growth of the English Bible."

Mrs. W. C. Payne will lecture upon "The Women of the Bible," "The History of Missions," "The Lives of Great Missionaries," and "The Miracles and Parables of Jesus."

In addition to the studies given at the lecture-room, 1300 Oread avenue, during the school year 1907-'08, special attention will be given group classes for Bible study in private, fraternity and sorority houses.

Any one desirous of further information may address Prof. W. C. Payne, 1300 Oread avenue, Lawrence, Kan.

WESTMINSTER HOUSE. This institution has been established by the Presbyterians of Kansas to afford the advantages of religious instruction, pastoral care and the atmosphere of a Christian home to their young people attending the University of Kansas. It was opened at the beginning of the last academic year, under the charge of Rev. Francis Allen Wilber, D. D., as principal, assisted by Mrs. Wilber. It has no organic connection with the University.

While denominational in its organization and control, this institution exerts no sectarian influence, but opens its classes and social features to all alike. No fees are charged and all are welcome.

Courses of study are offered in "Old Testament History," "Messianic Prophecy," "The Life of Christ," "The Teaching of Jesus," "Apostolic History and Literature," "History of the English Bible," "Modern Missions as Related to the World Movements of To-day," and a "Students' Round Table" for the discussion of current topics and subjects bearing upon university life. The following courses will be offered to special classes: "Pedagogy as Applied to Bible Teaching," "The History and Art of Hymnology," and "Beacon Lights of Church History."

The purpose of these courses is to offer to students of the University the advantages of thorough instruction in those branches of study which are distinctive features of the curriculum in denominational colleges. It is the intention to maintain the standard of instruction upon a par with that of the departments of the University, and to promote, by personal acquaintance and sympathetic hospitality, that effective pastoral care which was contemplated by the founders of Westminster House.

During the year 139 students have been enrolled in classes, some of which are held at Westminster House, and others at boarding-houses or the homes of fraternities and sororities.

All correspondence in regard to courses of study or pastoral matters should be addressed to Rev. Francis A. Wilber, Westminster House, 1125 Tennessee street, Lawrence, Kan.

SOCIAL AND LITERARY.

ASSOCIATION OF THE LADIES OF THE FACULTY. The women connected with the University as instructors and the wives of instructors form an association whose purpose is to promote the moral and social welfare of the students, and to further an acquaintance between themselves and the students. To this end, besides general receptions and gatherings for the discussion of questions of common interest, twice a month, on Fridays, the Ladies of the Faculty give an afternoon tea for the young women of the University. A committee of the association meets the young women at the University during the opening week of the year, and assists them in finding suitable boarding- and rooming-places. Students are always cordially welcome in the homes of the Faculty.

THE PHI BETA KAPPA SOCIETY. The Kansas Alpha chapter of this society was organized in April, 1890. The object of the society is, primarily, the promotion of scholarship in the University.

To this end, a portion of the members of the graduating class of the College, never to exceed one-fourth, who have made high records for scholarship in their University studies, are elected to membership.

THE UNIVERSITY ASSOCIATION. This is an organization of students and alumni for the purpose of promoting University spirit and advancing the interests of the University in any possible manner.

LITERARY SOCIETIES. There are four of these: The Snow, the Senate, the X Y Z, and the Adelpic. The objects which they are intended to promote are to cultivate literary taste and the spirit of sound criticism, to develop the necessary qualities of public speaking, and to learn the methods and rules of legislative bodies. The students of the School of Law maintain two debating societies, the Kent Club and the Cooley Club.

GERMAN CLUB. All students in the German department are eligible to membership in the German Club, which meets once a week in the German recitation-room. The object of the club is to furnish the student special opportunity to familiarize himself with the spoken language and to promote an interest in all that is German. Musical and literary programs are rendered each week by students, and the meetings are conducted exclusively in German. There are besides this club several smaller conversational circles, presided over by the instructors in the department. A special feature in connection with the club is the German play, which is given each year by the students of the department.

THE QUILL CLUB. An organization of students and instructors especially interested in English composition, which meets to hear and discuss original productions presented by members and others.

FRENCH CLUB. The instructors and students in the French department compose the *Cercle français*, which meets once a week to present a brief literary program, reviews of articles in the leading French magazines, and reports on French topics. French only is used, as one of the chief objects of the club is to provide better opportunities than can be offered in the classroom for the practice of the spoken language. Another opportunity for such practice is found in the French play, which is given towards the close of the year by the students of the department.

THE GREEK SYMPOSIUM consists of the instructors and students of the Greek department, who meet once a month for the reading of papers and discussion of topics which are either too general or too special for class work. The meetings are held in the evening,

at the home of one of the instructors, and the special program is followed by a social hour.

SCIENTIFIC.

THE SIGMA XI SOCIETY. The Iota chapter of this scientific honorary society was established at the University in 1890. The society confers the honor of election to membership upon students who have shown special aptitude along scientific lines, especially with regard to research work. This chapter holds monthly meetings for the reading and discussion of scientific papers, and is the center about which the scientific interests of the University are gathered.

BIOLOGICAL CLUBS. The instructors and students in each of the biological departments meet weekly, in separate clubs, for the discussion of matters relating to their respective branches of biological science.

CHEMICAL CLUB. This is composed of the instructors and advanced students in the departments of chemistry and pharmacy. It holds weekly meetings, at which the following are presented: Reports on research work by instructors and students; reports on scientific meetings and associations; reviews of new books and important articles in chemical journals; notices of important inventions and new chemical processes.

CIVIL ENGINEERING SOCIETY. This is maintained by instructors and students. It holds monthly meetings and is frequently addressed by practicing engineers, besides maintaining a good program of papers and discussions.

ELECTRICAL ENGINEERING SOCIETY. An organization of character and purposes similar to the above.

DEBATING AND DRAMATIC.

DEBATING COUNCIL. The council is made up of representatives chosen from the literary societies of the University, and under its supervision are held all preliminary and interstate debates. At present, annual debates are held with the University of Iowa and the Kansas colleges.

DRAMATIC CLUB. The students of the University maintain a Dramatic Club for the study and presentation of modern plays. Membership in the club is open to all students, and is secured by dramatic trials held at the beginning of the first term.

MUSICAL.

ORCHESTRA. Young men and women of the University form an Orchestra each year to furnish music for the chapel, commencement, and special convocations. The Orchestra has been reorganized and enlarged, and is under the direction of the Dean of the School of Fine Arts. Semiannual concerts are given.

MEN'S GLEE CLUB. The Men's Glee Club has been reorganized and placed upon a stable foundation. It is under the direction of the head of the department of voice training of the School of Fine Arts. The general control of the club, as to financial obligations and tours, is in the hands of a committee of the University Council. The semiannual concerts, given in December and May, are important University events. A tour of the state is made during the Christmas vacation.

VESPER CHORUS. The Vesper Chorus is composed of about thirty of the leading singers of the city and University, and takes part in the monthly vesper services. It is under the direction of the professor of voice training.

BAND. A band is formed each year, under a competent leader, among the young men of the University. It furnishes music at the various athletic contests held at the University and for other student gatherings.

THE FESTIVAL CHORUS. The Festival Chorus is composed of musical people of Lawrence and students of the University, mainly from the clubs named above. The director is the Dean of the School of Fine Arts. The Festival Chorus undertakes the chorus work for the annual spring music festival at Lawrence.

THE MANDOLIN CLUB. This club is organized for the purpose of combining the musical elements of the University interested in the mandolin, guitar, and banjo. The leader is appointed by the Dean of the School of Fine Arts. This club gives semiannual concerts and makes a tour of the state.

OPERA. An opera is given each year by students of the voice department, accompanied by the University Orchestra. The opera for 1907 was "The Pirates of Penzance," by Gilbert and Sullivan.

CONCERTS, ADDRESSES, AND ART EXHIBITIONS.

CONCERTS.

- OCTOBER, 1906... Concert, by the Fine Arts Faculty.
Organ recital, by George W. Andrews.
- NOVEMBER, 1906... Recital, by the Trio Class.
Students' recital.
Annual fall concert, by the University Orchestra.
- DECEMBER, 1906... Annual winter concert, by the University Glee Club.
Second students' recital.
Second recital, by the Trio Class.
Annual Christmas concert.
Piano recital, by Harold Henry.
- JANUARY, 1907... Violin and piano recital, by Helen and Nema Phipps.
- FEBRUARY, 1907... Piano recital, by Augusta Cottlow.
Song recital, by Mrs. Otis Huff.
Concert, by the University of Missouri Glee Club.
Third students' recital.
Opera, "The Pirates of Penzance."
- MARCH, 1907..... Organ recital, by Prof. Charles S. Skilton.
Concert, by the University Mandolin Club.
Fourth students' recital.
Piano recital, by Mary Wood Chase.
Chamber music recital, by the Wylie Quintet.
- APRIL, 1907..... Fifth students' recital.
Two-piano recital, by Professors Preyer and Skilton.
Annual spring concert, by the University Glee Club.
- MAY, 1907..... Annual spring concert, by the University Orchestra.
Sixth students' recital.
Fourth annual music festival—three concerts:
First, by Anton Hekking and Charlotte Maconda; second, by the Chicago Symphony Orchestra; third, by the Chicago Symphony Orchestra and the Festival Chorus.
- JUNE, 1907..... Graduating recitals.
Annual commencement concert.
Commencement organ recital, by Prof. Charles S. Skilton.

ADDRESSES.

The following University addresses were delivered at the University during the academic year 1905-'06; all University students were admitted to these addresses without charge:

JUNE 3, 1906. Baccalaureate sermon, Pres. Henry Churchill King, D. D., of Oberlin College.

JUNE 4, 1906. Sigma Xi address, Dean Calvin Milton Woodward, Ph. D., of Washington University.

JUNE 5, 1906. Alumni address, Prof. Arthur Linton Corbin, LL. B., of Yale University.

JUNE 7, 1906. Commencement address, Mr. Henry King, editor of the St. Louis *Globe-Democrat*.

SEPTEMBER 12, 1906. Opening address, Hon. Thomas Benton Murdock.

JANUARY 24-31, 1907. Prof. G. H. Palmer, of Harvard University. Subject: "Theories of Conscience."

FEBRUARY 12, 1907. Dr. Charles F. Minot, of Harvard University. Subjects: Biological (five lectures).

MARCH 5, 1907. Dr. A. A. Tanner, of Alton, Ill. Subject: "The Man in Overalls."

MARCH, 1907. Mrs. Mary H. Ford, of Kansas City, Mo. Subject: "Ibsen."

MARCH, 1907. Prof. W. K. Prentice, of Princeton University. Subject: "Early Christian Communities in Syria."

MARCH 7, 1907. Prof. G. J. Laing, of Chicago University. Subject: "Etruscan Art."

MARCH 14, 1907. Mrs. Cora G. Lewis, of Topeka, Kan. Subject: "The Kansas Conscience."

APRIL 18, 19, 1907. Prof. Mason B. Thomas, of Wabash College. Subject: "Bacteria."

APRIL 19, 20, 1907. Prof. W. M. Patton, of Baker University. Subject: "Hebrew Literature."

APRIL 19, 20, 1907. Prof. R. D. Salisbury, of Chicago University. Subject: "Greenland."

ART EXHIBITION.

An annual exhibition of works of art is held at the University, together with a course of lectures upon subjects related to the fine arts. During the present year the exhibition consisted of 100 paintings by leading American artists, which was open from April

1 to 20. At the close of the year there is held an exhibition of work done by pupils of the department of drawing and painting.

ATHLETIC.

ATHLETIC ASSOCIATION. This association is organized to encourage and promote the physical education and hygienic training of matriculates and graduates of the University of Kansas, and to foster and supervise athletic games, to wit, baseball, boating, football, tennis, track athletics, basket-ball, and other innocent sports, in connection with the University. Membership in the association is open to all students, graduates, officials, and members of the Faculty.

THE COUNTRY CLUB is one of the oldest University organizations. Its object is to take the students on tramps into the country surrounding Lawrence, studying the historical events associated with the vicinity, and natural objects in their own realm.

THE GOLF CLUB has its links on the University grounds. It is a self-supporting, independent organization, and membership is open to students of the University.

GENERAL ATHLETICS. The general athletics of the University include football, baseball, basket-ball, tennis, and other forms of exercise.

INTERCOLLEGIATE GAMES are held as often as deemed best, for the encouragement of *esprit de corps* among the students and a friendly rivalry between sister universities.

CONTROL. All forms of exercise, athletics and games are under the control of the director of the gymnasium and his assistants. Competitive games and athletics are encouraged to the extent of inspiring the student to develop his physical condition, but not to the extent of interfering with his studies.

THE ATHLETIC BOARD. All intercollegiate athletic contests are under the control of the University Athletic Board, composed of four students elected by the students, four Faculty members elected by the University Council, the Chancellor of the University, the president of the Athletic Association, and the professor of physical education. The last three are *ex officio* members.

RULES. The University Council has adopted rules governing the standing of all those who represent the University in athletic contests. Good scholarship and gentlemanly conduct are required of all such contestants.

UNIVERSITY PUBLICATIONS.

THE UNIVERSITY OF KANSAS SCIENCE BULLETIN, formerly the *Kansas University Quarterly*, is maintained by the University as the medium for the publication of the results of original research by members of the University. Papers are published in it only on recommendation of the committee of publication, which committee is composed of five members of the scientific faculty. Formerly the *Quarterly* was issued at regular intervals, as indicated by the title, but numbers of the present series appear without regard to specific dates. A volume consists of about 400 pages, with the necessary illustrations. The price of subscription is three dollars a volume. Individual numbers vary in price with the cost of publication. The current volume of the present year is volume IV; continuous series, volume XIV. Exchanges with similar publications of other colleges or universities and learned societies are solicited. H. B. Newson is corresponding secretary. Communications should be addressed to him.

THE UNIVERSITY NEWS BULLETIN is issued weekly from the Registrar's office, for the purpose of furnishing the newspapers, high-school students and others of the state items of interest regarding University affairs. It will be sent regularly, without charge, to any one who may express a desire to receive it.

THE GRADUATE MAGAZINE is published monthly during the academic year by the Alumni Association of the University. Each volume contains the formal University addresses of the year and articles on subjects related to the University. Departments containing news matter of interest to alumni and former students are included in each number.

THE KANSAN is a newspaper published twice a week by student representatives from the various schools of the University.

THE JAYHAWKER is the annual published each year by the Senior classes of the schools of the University.

THE KANSAS UNIVERSITY LAWYER is published monthly by the students of the School of Law, and is devoted to the interests of that school.

THE UNIVERSITY GEOLOGICAL SURVEY REPORTS are issued from time to time as material for them is gathered.

UNIVERSITY PRIZES.

THE WILLIAM J. BRYAN PRIZE FUND. Hon. William J. Bryan, of Lincoln, Neb., in 1898 presented the University \$250, to be used as follows: This sum is to be invested, and the yearly interest on the same is to be given that student presenting the best thesis on some one principle of our government. The details of the contest are entrusted to the Faculty of the University.

LECTURES OFFERED TO KANSAS COMMUNITIES.

In order that as many people of the state as possible may receive some immediate benefit from the University as an institution established for the dissemination of learning, a large number of lectures are offered to Kansas communities by the Faculty of the University. For the convenience of those wishing such services, a classified list of such lectures and addresses will be mailed free on request. These lectures are suitable for delivery under the auspices of high schools, educational, literary or religious societies. It is expected in every case that the speaker's expenses will be paid by those desiring his services. Wherever it is customary to pay something in addition, or where admission is charged, a reasonable fee should be added. In the last-mentioned case this may, if desired, take the form of a percentage of the receipts. In other cases it will depend upon circumstances and the character of the lecture. In most cases the necessary arrangements as to terms, subjects, dates and similar details may best be made with the lecturer.

CONCERTS OFFERED TO KANSAS COMMUNITIES.

The School of Fine Arts is prepared to furnish soloists to take part in concerts, music festivals, or public celebrations, or to give entire recital programs by members of the music and dramatic faculty and the University musical organizations. The following artists may be secured: Dean Charles S. Skilton, organ and lecture recitals; Prof. Carl A. Preyer, piano; Prof. C. Edward Hubach, tenor; Mrs. Blanche Lyons, soprano; Miss Helen Phipps, violin; Prof. Edgar G. Frazier, dramatic reader; also the University Orchestra of twenty pieces, the University Glee Club, the University Mandolin Club. Address the Dean of the School of Fine Arts.

RECOMMENDATION OF TEACHERS.

The University endeavors to assist those of its graduates who desire to teach in securing positions, and at the same time to be of service to high schools, academies and colleges which may be in

need of competent instructors. To this end a committee of the Faculty preserves a complete list and record of graduates who are engaged in teaching or have fitted themselves especially for such work. The University authorities are thus prepared at any time to recommend persons who are well qualified for any position that may be made vacant. In so doing, great care is exercised, the special qualifications of various teachers for the particular position in hand being in every case fully considered.

UNIVERSITY PHYSICIAN.

A University physician has been appointed better to look after sick students away from home; to consult with students in all matters relating to health, and to prevent, when possible, trivial ailments becoming serious; to provide necessary medical services gratuitously to those who are making their way through the University; to work with the University health committee in seeking out and eliminating special sources of infection, and in preventing the spread of infectious and contagious diseases among the students of the University. Dr. S. C. Emley, of the department of pathology of the School of Medicine, has been appointed by the Board of Regents University Physician.

ANALYSIS OF FOOD AND DRUGS.

The legislature in 1905 passed a bill making it the duty of the chemistry departments of the University and the State Agricultural College, under the direction of the State Board of Health, to make analyses of samples of foods and beverages collected by any county or city board of health of the state of Kansas, and to make reports upon the same.

In conformity with this law, during the last year and a half, the chemistry department of the University has examined a large number of food products, and the reports of these analyses have been published in the monthly *Bulletin* of the Board of Health. The Kansas food and drugs act of February 14, 1907, requires analyses of drugs to be made by the pharmacy department at the University of Kansas, and of food products to be made by the chemistry departments at the University and the Agricultural College. A special laboratory is being fitted up for the analysis of drugs and another for the analysis of foods. These laboratories will be completely furnished with the necessary material, and a sufficient number of assistants will be employed to carry on the work expeditiously.

WATER SURVEY.

During the 1907 session of the legislature a bill was passed providing for a survey of the waters of Kansas to be carried on under the joint auspices of the State Board of Health and the United States Geological Survey. This work contemplates the complete determination of the mineral matter in all the larger streams of the state and a study of the industrial waste and the sewage in streams.

Samples of the water of the rivers are taken daily at twenty-three stations, and these samples are forwarded to the University in mailing cases, to be used in making the mineral analysis. This work is already inaugurated and has been carried on during the last six months, and when completed it will be of great scientific and industrial importance to the people of the state.

SCIENTIFIC CONTROL OF WATERS AND SEWAGE.

There was also passed at the 1907 session of the legislature an act to preserve the purity of the waters of the state, for the protection of public health, and providing for the control by the Board of Health of municipal water-supplies and of the sewage systems of the state. Much of the work for the proper enforcement of this law and to carry out its provisions will fall to the engineering department and the chemistry department of the University, as the heads of these departments are advisory members of the State Board of Health.

Questions of the availability and wholesomeness of water-supplies, and the putting in of new supplies for cities, of sewage disposal, of purification of sewage and the use of septic tanks will be referred to the scientific departments of the University.

ENTOMOLOGICAL COMMISSION.

The 1907 session of the legislature created the State Entomological Commission. The field-work of this commission is conducted by the departments of entomology at the University and the Agricultural College. The University has performed the work of inspecting nurseries and issuing certificates to them since the beginning of such requirements, in 1896. It has also conducted some extensive investigations in the interests of agriculture and horticulture. Under this commission the department of entomology at the University will cover a much wider field and will publish from time to time the results of its work.

BACTERIOLOGICAL EXAMINATION OF WATER.

In connection with the United States Government Hydrographical Survey, the department of bacteriology has undertaken a series of tests of water from wells and various other sources. The aim of the work is largely the determination of the extent and source of water pollution through sewage and surface drainage.

PART III.

DEPARTMENTS OF INSTRUCTION.

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I. THE GRADUATE SCHOOL.

FACULTY.

FRANK STRONG, Ph. D., President.

FRANK W. BLACKMAR, Ph. D., Dean, and Professor of Sociology and Economics.

FRANCIS H. SNOW, Ph. D., Professor of Organic Evolution and Systematic Entomology.

EPHRAIM MILLER, Ph. D., Professor of Mathematics and Astronomy.

WILLIAM H. CARRUTH, Ph. D., Professor of Germanic Languages and Literatures.

FRANK O. MARVIN, A. M., Professor of Civil Engineering.

EDGAR H. S. BAILEY, Ph. D., Professor of Chemistry and Metallurgy.

ALEXANDER M. WILCOX, Ph. D., Professor of Greek Language and Literature.

LUCIUS E. SAYRE, Ph. M., Professor of Pharmacy.

LEWIS L. DYCHE, M. S., Professor of Systematic Zoölogy.

CHARLES G. DUNLAP, Litt. D., Professor of English Literature.

OLIN TEMPLIN, A. M., Professor of Philosophy.

EDWIN M. HOPKINS, Ph. D., Professor of Rhetoric and English Language.

FRANK H. HODDER, Ph. M., Professor of American History and Political Science.

ERASMUS HAWORTH, Ph. D., Professor of Geology and Mineralogy.

ARTHUR T. WALKER, Ph. D., Professor of Latin Language and Literature.

WILLIAM C. STEVENS, M. S., Professor of Botany.

ARVIN S. OLIN, A. M., Professor of Education.

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JOHN E. BOODIN, Ph. D., Professor of Philosophy.

IDA H. HYDE, Ph. D., Professor of Physiology.

WILLIAM H. JOHNSON, A. M., Professor of Education.

- HENRY B. NEWSON, Ph. D., Professor of Mathematics.
 GEORGE H. HOXIE, M. D., Professor of Internal Medicine.
 BRUCE V. HILL, Ph. D., Acting Professor of Physics and Electrical Engineering.
 JAMES NAISMITH, M. D., Professor of Physical Education.
 MARSHALL A. BARBER, A. M., Professor of Bacteriology and Pathology.
 SAMUEL J. HUNTER, A. M., Professor of Entomology.
 CLARENCE E. MCCLUNG, Ph. D., Professor of Zoölogy.
 PERLEY F. WALKER, M. M. E., Professor of Mechanical Engineering.
 MERVIN T. SUDLER, Ph. D., M. D., Professor of Anatomy.
 ROBERT K. DUNCAN, A. B., Professor of Industrial Chemistry.
 MILES W. STERLING, A. M., Associate Professor of Greek.
 RAPHAEL D. O'LEARY, A. B., Associate Professor of English Language.
 HANNAH OLIVER, A. M., Associate Professor of Latin.
 ELMER F. ENGEL, A. M., Associate Professor of German.
 SAMUEL C. EMLEY, A. B., M. D., Associate Professor of Pathology.
 SELDEN L. WHITCOMB, A. M., Associate Professor of English Literature.
 HAMILTON P. CADY, Ph. D., Associate Professor of Chemistry.
 EDGAR G. FRAZIER, Ph. B., Associate Professor of Public Speaking and Debate.
 MARTIN E. RICE, M. S., Associate Professor of Physics and Electrical Engineering.
 RALPH W. CONE, A. M., Associate Professor of Sociology and Economics.
 WILLIAM C. HOAD, B. S., Associate Professor of Civil Engineering.
 JOHN N. VAN DER VRIES, Ph. D., Associate Professor of Mathematics.
 RALPH E. BASSETT, A. M., Associate Professor of Romance Languages.
 CLINTON M. YOUNG, B. S., Associate Professor of Mining Engineering.
 RAYMOND A. SCHWEGLER, A. B., Associate Professor of Education.
 B. J. DALTON, B. S., Acting Associate Professor of Civil Engineering.

 ADMINISTRATIVE COMMITTEE.

 FRANK W. BLACKMAR, *Dean*.

FRANK H. HODDER.

CHARLES G. DUNLAP.

FRANK O. MARVIN.

EDGAR H. S. BAILEY.

PURPOSES OF THE SCHOOL.

THE Graduate School provides all the instruction in advanced subjects offered in the University. It is under the direction of the Faculty and administrative committee of the Graduate School, the Dean of the Graduate School being chairman of the administrative committee.

It was organized in 1896, mainly out of the College of Liberal Arts and Sciences and the School of Engineering, and the most of the work offered by the Graduate School is given in connection with the several departments of these schools.

It is the business of the Faculty of the Graduate School to formulate courses in graduate work; to establish and maintain the requirements for all higher degrees offered by this University; to make recommendations for those degrees to the Board of Regents; and to fix such regulations as they may deem expedient for the government of the school.

REQUIREMENTS FOR ADMISSION.

Admission to the Graduate School ordinarily is granted to graduates of this University holding the bachelor's degree, and to graduates of other colleges and universities of good standing on presentation of proper evidence of scholarship and testimonials of good character.

RULES FOR GRADUATE WORK.

Graduate students, whether candidates for a degree or not, must be in regular attendance on such course or courses as may have been selected and approved, and will be required to pass all examinations, or to submit to such other regulations and requirements as may be imposed by the heads of the departments concerned. Graduate students who pursue their work in part elsewhere must conform to the requirements imposed in each case by the administrative committee.

REGISTRATION.

When it is ascertained in what department the student desires to do his major work, the Dean will refer him to the head of that department, who will select the courses, after consultation with the student. The student will then submit the courses to the Dean, and if approved the applicant will be given a card permitting him to register in the office of the Registrar. Work to be counted as graduate work is specified in the catalogue, and must

be designated as graduate on the enrolment card filed in the Registrar's office.

DEGREES GRANTED.

The University offers eight advanced degrees, viz.:

MASTER OF ARTS.	MECHANICAL ENGINEER.
MASTER OF SCIENCE.	MINING ENGINEER.
ELECTRICAL ENGINEER.	CHEMICAL ENGINEER.
CIVIL ENGINEER.	DOCTOR OF PHILOSOPHY.

MASTER OF ARTS AND MASTER OF SCIENCE.

The master's degree will be granted only after at least one full year's graduate work. One year of residence at the University is required for the master's degree. Time spent in undergraduate work may be counted in satisfying this rule. The candidate must have completed with high credit thirty hours of work chosen from the courses open to graduates; other courses may be offered only by the special consent of the departments concerned and of the administrative committee; but courses for which a professional certificate or diploma is given will not be counted toward this degree. Not more than sixteen hours' credit can be given in one term.

The degree of master of arts will be granted to bachelors of arts, and the degree of master of science to graduates in engineering. Students who have had special preparation in scientific studies and whose graduate work is in scientific departments may, upon recommendation of the administrative committee, receive the degree of master of science.

When the candidate is first permitted to enroll as a graduate student, he shall select the department in which his major work is to be done. The head of that department will, in consultation with the candidate, select the courses to be taken for the ensuing term. These may be confined to the department of his major study, or may be selected from that and not more than two other departments. The decision of the head of the department shall be subject to the veto of the Dean of the Graduate School; appeal may be made from the decision of the Dean to the Graduate Faculty. If the student subsequently changes his selection of a major department, the graduate work already done shall not be counted toward the master's degree unless approved by the head of his new major department.

Not later than the 15th of May preceding the commencement at which the degree is to be conferred, he must present to the head of the department in which his chief study has been, a thesis which

must embody some scholarly research on some topic connected with that study. The thesis shall be written, either in a clear, legible hand or typewritten, on bond paper of twenty pounds' weight to the ream; the paper to be cut to the size of eight inches by ten inches. One and one-half inches margin must be left on the left side of the paper, for convenience in binding.

Not more than five hours of graduate work may be done *in absentia* in candidacy for the master's degree, and this only in case of student's completing the work for the degree. The term *in absentia* applies to work not done in colleges and universities.

ENGINEERING DEGREES.

Graduates in engineering in this University, and masters of science who have received their degrees through the Graduate Faculty, are eligible to the professional degrees of civil engineer, electrical engineer, mechanical engineer, mining engineer, or chemical engineer, whichever is appropriate to the undergraduate course taken. Candidates for these degrees must have spent at least three years' actual time in professional practice, in positions of responsibility, in the design, construction or operation of engineering works, and must furnish detailed and satisfactory evidence as to the nature and extent of this practice.

They must submit an engineering thesis, accompanied by detailed explanations, drawings, specifications, estimates, etc., and embodying the results of their own work or observation. If approved, the thesis and all accompanying material shall be the property of the University.

All theses for any professional degree must be delivered to the Dean of the School of Engineering on or before the 15th day of May.

DOCTOR OF PHILOSOPHY.

The degree of doctor of philosophy will be granted on the ground of advanced scholarship, and the performance of independent work in some special line under the following conditions:

1. The candidate must be a baccalaureate graduate of this University or of some other college or university of good standing; or he must give satisfactory evidence to the Faculty of the Graduate School that he possesses an adequate preparation for graduate work.

2. He must make application to the Dean of the Graduate School before the 1st day of October preceding the commencement at which he intends to present himself for the degree, and must then give

satisfactory evidence of his ability to read such German and French as may be necessary for the proper prosecution of his studies.

3. He must have spent at least three full college years in resident graduate work at this or some other approved university; the last year must be spent as a resident student of this University. The time spent in attaining the degree of A. M. may be counted toward satisfying this time condition.

4. He must present a thesis showing the result of original research of a high character, and must pass acceptable examinations, both written and oral, in one chief or major study and two allied, subsidiary or minor studies, not more than two of which may be in the same department. The oral examination shall be before the Faculty of the Graduate School, where he may be required to defend his thesis. The thesis, embodying the results of original research in some subject connected with his major study, must be presented to the head of the department in which the work was done not later than the 1st of May preceding the commencement at which the degree is to be conferred, and if approved by him shall be placed on file for inspection in the office of the Dean of the Graduate School for at least two weeks. If finally approved, not less than 100 printed copies must be delivered to the Librarian of the University before receiving the degree, or proper security be given for the printing of that number; provided, that if the thesis has already been printed, ten copies only shall be deposited with the Librarian.

FEEES AND EXPENSES.

According to a recent act of the state legislature, an incidental fee of ten dollars is charged Kansas students of this school. Students who matriculate for the first time pay five dollars additional. For non-residents of the state both these fees are double. A diploma fee of five dollars is required. The other expenses of students differ according to circumstances and the tastes of the student. A full statement in regard to general expenses will be found under the College of Liberal Arts and Sciences, on another page of this catalogue.

GRADUATE SCHOOL ORGANIZATIONS.

THE GRADUATE CLUB. This is an organization composed of the graduate students of the University, designed especially to bring this class of students, each of whom is largely working independently, into closer touch socially and intellectually.

OTHER ORGANIZATIONS. Students of the Graduate School are also eligible to membership in other organizations of the University.

such as the literary societies, the modern language and science clubs, etc., a full account of which will be found in another part of this catalogue.

SEMINARS AND CONFERENCES.

The seminars of the Graduate School are also open under certain conditions to undergraduates pursuing advanced work.

AMERICAN HISTORY. The seminar in American history meets once a week for research work in some phase of American history.

EUROPEAN HISTORY. The seminar in European history is held twice a week throughout the year. Some period of European history is selected as the subject of special research.

HISTORY CONFERENCE. A conference of the department of European history and allied departments is held once in two weeks, from January to April.

GERMAN. The meetings average once in two weeks during the year and advanced work is assigned and reported on.

ZOOLOGY. The meetings average once in two weeks, and problems in heredity were under consideration during the last year.

BACTERIOLOGY. The students in bacteriology have special meetings once a week.

SEMINAR OF SOCIOLOGY AND ECONOMICS. A general conference, open to graduate students, for research work in economics and sociology, meets once each week.

SEMINAR ROOMS.

THE SPOONER LIBRARY is well furnished with facilities for seminar and departmental work. Separate rooms for seminar work are provided in Latin, German, philosophy, English literature and language, mathematics, European and American history. The entire upper floor of the library, outside of the stacks, is given up to the departmental libraries of economics, sociology, American and European history. The seminar work in science is done in the buildings devoted to the work of the separate departments.

FELLOWSHIPS.

For the encouragement of advanced study and research, eleven teaching fellowships have been established for graduates of special merit. Each fellowship entitles the holder to \$265. Holders of such fellowships are obliged to teach not more than seven hours a week in the respective departments in which they are chosen. The

remainder of the time shall be devoted to investigation and research leading to an advanced degree.

These fellowships are awarded to graduates of the University of Kansas, and of other colleges and universities of good standing, who have distinguished themselves for special scholarship and marked ability. Applications for fellowships must be filed, on blanks provided for the same, with the Chancellor of the University, on or before the 15th of May of the collegiate year preceding that during which the fellowship is held. Such application may be accompanied by recommendations from instructors, and original work of the applicant, either published or in manuscript.

The relative merits of applicants shall be considered by a committee composed of the members of the administrative committee of the Graduate School and the heads of the departments in which the fellowships are granted. The committee, after a full consideration of the merits of all applicants, shall nominate the candidates and recommend the same to the Regents for election.

The Board of Regents will determine each year the departments in which fellowships shall be granted. All fellowships will be filled each year. Fellows may be reelected, in special cases, for one additional year only.

For the year 1907-'08 fellowships will be awarded in the following subjects: German, mathematics, education, sociology, Romance languages, English language, chemistry, American history, European history, zoölogy, and philosophy.

DEPARTMENTS.

The following departments offer graduate work in the University. In some of them the facilities are adequate for thorough training for the doctor's degree. In all of them the facilities are excellent for work leading to the master's degree. See index for headings (enumerated below) on other pages of this catalogue.

Department.	Course No.
Anatomy.....	4
Botany.....	14
Chemistry.....	22
Education	6
Education, Physical	6
Economics.....	17
English Language.....	16
English Literature	22
Engineering, Civil.....	5
Engineering, Mechanical	16

Department.	Course No.
Entomology	7
Evolution, Organic	2
Geology	4
Germanic Languages and Literatures	13
Greek	12
History, American	7
History, European	19
Latin Language and Literature	16
Mathematics	17
Mineralogy	6
Philosophy and Psychology	14
Physics	5
Physiology	2
Romance Languages and Literatures	19
Sociology	10
Zoölogy	16

COURSES FOR GRADUATE INSTRUCTION will be found in detail under courses of instruction for the College of Liberal Arts and Sciences and the School of Engineering.

II. THE COLLEGE OF LIBERAL ARTS AND SCIENCES.

FACULTY.

FRANK STRONG, Ph. D., President.

OLIN TEMPLIN, A. M., Dean. Professor of Philosophy.

GEORGE O. FOSTER, A. B., Secretary.

FRANCIS H. SNOW, Ph. D., Professor of Organic Evolution and Systematic Entomology.

EPHRAIM MILLER, Ph. D., Professor of Mathematics and Astronomy.

WILLIAM H. CARRUTH, Ph. D., Professor of Germanic Languages and Literatures.

FRANK O. MARVIN, A. M., Professor of Civil Engineering.

EDGAR H. S. BAILEY, Ph. D., Professor of Chemistry and Metallurgy.

ALEXANDER M. WILCOX, Ph. D., Professor of Greek Language and Literature.

LUCIUS E. SAYRE, Ph. D., Professor of Pharmacy.

LEWIS L. DYCHE, M. S., Professor of Systematic Zoölogy.

FRANK W. BLACKMAR, Ph. D., Professor of Sociology and Economics.

CHARLES G. DUNLAP, Litt. D., Professor of English Literature.

EDWIN M. HOPKINS, Ph. D., Professor of Rhetoric and English Language.

FRANK H. HODDER, Ph. M., Professor of American History and Political Science.

ERASMUS HAWORTH, Ph. D., Professor of Geology and Mineralogy.

ARTHUR T. WALKER, Ph. D., Professor of Latin Language and Literature.

WILLIAM C. STEVENS, M. S., Professor of Botany.

ARVIN S. OLIN, A. M., Professor of Education.

WILLIAM A. GRIFFITH, Professor of Drawing.

EUGENIE GALLOO, A. M., Professor of Romance Languages and Literatures.

WILBUR C. ABBOTT, B. Litt., Professor of European History.

- CHARLES S. SKILTON, A. B., Professor of Musical Theory, History of the Fine Arts, and Organ.
- JOHN E. BOODIN, Ph. D., Professor of Philosophy.
- IDA H. HYDE, Ph. D., Professor of Physiology.
- HENRY B. NEWSON, Ph. D., Professor of Mathematics.
- WILLIAM H. JOHNSON, A. M., Professor of Education.
- BRUCE V. HILL, Ph. D., Acting Professor of Physics and Electrical Engineering.
- JAMES NAISMITH, M. D., Professor of Physical Education.
- MARSHALL A. BARBER, A. M., Professor of Bacteriology and Pathology.
- SAMUEL J. HUNTER, A. M., Professor of Entomology.
- CLARENCE E. MCCLUNG, Ph. D., Professor of Zoölogy.
- MERVIN T. SUDLER, Ph. D., Professor of Anatomy.
- PERLEY F. WALKER, M. E., Professor of Mechanical Engineering.
- ROBERT K. DUNCAN, A. B., Professor of Industrial Chemistry.
- MILES W. STERLING, A. M., Associate Professor of Greek.
- RAPHAEL D. O'LEARY, A. B., Associate Professor of English.
- HANNAH OLIVER, A. M., Associate Professor of Latin.
- ELMER F. ENGEL, A. M., Associate Professor of German.
- SELDEN L. WHITCOMB, A. M., Associate Professor of English Literature.
- HAMILTON P. CADY, Ph. D., Associate Professor of Chemistry.
- EDGAR G. FRAZIER, Ph. B., Associate Professor of Public Speaking.
- CHARLES M. HARGER, Lecturer in Journalism.
- MARTIN E. RICE, M. S., Associate Professor of Physics and Electrical Engineering.
- RALPH W. CONE, A. M., Associate Professor of Sociology and Economics.
- WILLIAM C. HOAD,* B. S., Associate Professor of Civil Engineering.
- JOHN N. VAN DER VRIES, Ph. D., Associate Professor of Mathematics.
- RALPH E. BASSETT, A. M., Associate Professor of Romance Languages.
- ARCHIBALD HOGG, A. B., Assistant Professor of Philosophy.
- ALMA LE DUC, Ph. B., Assistant Professor of Romance Languages.
- ALBERTA L. CORBIN, Ph. D., Assistant Professor of German.
- FREDERIC N. RAYMOND, A. M., Assistant Professor of English.
- MARGARET LYNN, A. M., Assistant Professor of English.
- CARL L. BECKER, B. L., Assistant Professor of European History.
- FRANK E. BRYANT, A. M., Assistant Professor of English.

* Absent on leave, 1906-'07.

DAVID F. MCFARLAND, M. S., Assistant Professor of Chemistry.
ARTHUR J. BOYNTON, A. M., Assistant Professor of Sociology and Economics.

CHARLES H. ASHTON, A. M., Assistant Professor of Mathematics.

GEORGE F. KAY, A. M., Assistant Professor of Geology and Mineralogy.

ROBERT W. CURTIS, Ph. D., Assistant Professor of Chemistry.

MARY C. FISH, Assistant Professor of Physical Education.

LOUIS E. SISSON, A. B., Assistant Professor of Rhetoric.

WILLIAM J. BAUMGARTNER, A. M., Assistant Professor of Zoölogy and Histology.

HENRY O. KRUSE, A. M., Assistant Professor of German.

ELSIE NEUEN SCHWANDER, A. B., Assistant Professor of Romance Languages.

CHARLES H. GRAY, Ph. D., Assistant Professor of English Language.

WALLACE NOTESTEIN, A. M., Assistant Professor of European History.

HERBERT H. VAUGHAN, Ph. D., Assistant Professor of Romance Languages.

FRANCIS W. BUSHONG, S. D., Assistant Professor of Chemistry.

MARY I. MCFADDEN, Ph. B., Acting Assistant Professor of Education.

LULU GARDNER, A. B., Instructor in Rhetoric.

JAMES A. CAMPBELL, A. M., Instructor in German.

RICHARD T. HARGREAVES, A. B., Instructor in Latin.

A. G. W. CHILDS, M. D., Instructor in Physiology.

LARRY M. PEACE, A. B., Preparator in Botanical Laboratory.

NADINE NOWLIN, A. M., Assistant Instructor in Zoölogy.

ULYSSES G. MITCHELL, A. B., Assistant Instructor in Mathematics.

ARTHUR D. PITCHER, A. B., Assistant Instructor in Mathematics.

CLAUDE DEMING, A. M., Assistant Instructor in American History.

EDWARD M. BRIGGS, A. B., Assistant Instructor in German.

THOMAS B. FORD, A. B., Assistant Instructor in Chemistry

RICHARD E. SCAMMON, A. M., Assistant Instructor in Zoölogy.

COURSES OFFERED.

The College offers the courses in literature, science and the arts that provide the so-called liberal education, and leaves in the main the applied science and arts to other departments. It is administered so that the required work for entrance and during Freshman and Sophomore years shall result in the student's having had a minimum number of courses in the fundamental branches of knowledge on which he will base his broader and more specialized work of the Junior and Senior years.

DEGREE CONFERRED.

All graduates of the College receive degree of bachelor of arts.

ADMISSION.

There are two methods of admission to the College: First, by examination; second, by certificate.

1.—BY EXAMINATION.

TIMES AND PLACE. Candidates for admission to first-year work in the College of the University, not presenting the required certificates, will be examined at the University, Lawrence, either on Thursday, Friday, and Saturday, May 30, May 31, and June 1, 1907, or on Wednesday, Thursday, and Friday, September 18, 19, and 20, 1907. The following is the schedule of examinations:

Thursday, May 30, or Wednesday, September 18.

- | | |
|-----------------|--------------------------|
| 9-10. English. | 1-2. Physical geography. |
| 10-11. Algebra. | 2-3. German. |
| 11-12. French. | 3-4. Economics. |

Friday, May 31, or Thursday, September 19.

- | |
|-----------------|
| 9-10. Geometry. |
| 10-11. Latin. |
| 11-12. History. |
| 2-3. Greek. |
| 3-4. Physics. |

Saturday, June 1, or Friday, September 20.

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|-------------------------|
| 8-9. Botany. |
| 9-10. Chemistry. |
| 1-2. Zoölogy. |
| 2-4. Free-hand drawing. |

Candidates for admission may divide the examination between two years, or between the two examinations of the same year, under the following conditions: The applicant may present himself at the preliminary for examination in any or all of the prescribed subjects, and, if he is successful in five or more subjects, he need not be again examined in them.

Examinations for advanced standing on work done in preparatory schools, not required for admission, will be held at the same time as entrance examinations above.

2. — BY CERTIFICATE.

Nearly all students enter the College by certificate from high schools, academies, military schools, or preparatory schools of other colleges and universities, accredited by the University.

The candidate for admission by certificate must present either a certificate of graduation from an accredited preparatory school, or a letter from the principal of such school recommending him for admission without graduation. The certificate should be signed by the principal or other executive officer of the school. Blank certificates will be sent by the Registrar of the University about May 1 of each year to the principal of each accredited school. The certificates of all expecting to enter the College of the University should be filled out, signed and returned by the principal or superintendent of schools to the Registrar before June 1.

Blank certificates will be sent on application to the Registrar.

ENTRANCE UNIT.

Preparatory work is estimated in terms of the "entrance unit." A subject (like algebra, for example) running one year, *i. e.*, thirty-five weeks, five recitations per week, with at least forty minutes for each recitation, constitutes one "entrance unit." In computing entrance units, the laboratory period should be twice the length of a recitation period.

NUMBER OF UNITS REQUIRED.

Fifteen units are necessary for unconditional admission to the College. A temporary deficiency, however, of not more than three units will be permitted, but the deficiency in any "group" given below must not exceed one unit.

MAKING UP DEFICIENCIES.

A student thus conditioned must make good all of his deficiencies during his first year in the University. Deficiencies thus made good do not count as College work.

In making up deficiencies at the University, a "College unit," *i. e.*, five hours a week for a half-year (one term), is considered

equivalent to an "entrance" (or high-school) "unit," as above defined.

COLLEGE CREDIT.

College credit for work done in preparatory schools will be given upon examination only. (See page 81 for times and place of examination.)

SUBJECTS FOR ADMISSION.

The subjects from which entrance work may be offered, together with the number of units, are arranged in six groups, as follows; a total of fifteen units must be offered :

GROUP I, English.	English, four units.	Three units are required.
GROUP II, Mathematics.	Elementary algebra, one and one-half units. Plane geometry, one unit. Solid geometry, one-half unit. Plane trigonometry, one-half unit. Advanced algebra, one-half unit.	The elementary algebra and plane geometry are required.
GROUP III, Foreign Languages.	Latin, four units. Greek, three units. German, three units. French, three units.	Of these, three units are required, which must be, first, in Latin, or, second, in German.*
GROUP IV, Physical Sciences.	Physical geography, one unit. Physics, one unit. Chemistry, one unit.	One unit is required.
GROUP V, Biological Sciences.	Botany, one unit. Zoölogy, one unit. Physiology, one unit.	One unit is required.
GROUP VI, History.	Greek and Roman, one unit. Mediæval and modern, one unit. English, one unit. American, one unit. Economics, one unit.	One unit is required.

* The College does not encourage the substitution of German for Latin for entrance to the Freshman year.

As observed above, to secure unconditional admission to the Freshman class of the College the candidate must offer fifteen units from the foregoing list of accredited preparatory subjects. Of these fifteen units, eleven and one-half are prescribed by group; the remaining three and one-half units may be chosen without restriction.

In view of the difficulty some preparatory schools may have in expanding their courses of study so as to include all the required units, until further notice candidates will be admitted unconditionally who offer fifteen units from the foregoing list, with only eight and one-half units specifically required. These required subjects are, three units of English, three units of either Latin or German (not a combination of the two); two and one-half units of mathematics; the remaining six and one-half units may be selected from the six groups without restriction.

Students entering with fifteen units who take advantage of this privilege of postponing prescribed entrance requirements must make good such deferred requirements during their first year in the College. A course so taken during the Freshman year counts as regular College work.

It is hoped that within a reasonable time all Kansas high schools will be able so to arrange their courses of study as to meet all the entrance requirements of the University.

ENTRANCE SUBJECTS IN DETAIL.

ENGLISH.

Four units (three required).

The requirement in English is that agreed upon by a joint committee of colleges and secondary schools and now uniformly accepted by all colleges in the United States. Of this requirement, the following is a general definition:

“I. READING. A certain number of books will be set for reading (see list subjoined). The candidate will be required to present evidence of a general knowledge of the subject-matter and to answer simple questions on the lives of the authors. The form of examination will usually be the writing of a paragraph or two on each of several topics to be chosen by the candidate from a considerable number—perhaps ten or fifteen—set before him in the examination paper. The treatment of these topics is designed to test the candidate's power of clear and accurate expression, and will call for only a general knowledge of the substance of the books. In place of a part or the whole of this test, the candidate may present an exercise book, properly certified by his instructor, contain-

ing compositions or other written work done in connection with the reading of the book. In preparation for this part of the requirement, it is important that the candidate shall have been instructed in the fundamental principles of rhetoric.

“II. STUDY AND PRACTICE. This part of the examination presupposes the thorough study of each of the works named in this division. The examination will be upon the subject-matter, form, and structure. In addition, the candidate may be required to answer questions involving the essentials of English grammar and on the leading facts in English literary history to which the prescribed texts belong.

“*Note.*—No candidate will be accepted in English whose work is notably defective in point of spelling, punctuation, idiom, or division into paragraphs.”

The books recommended for use in each of the preceding divisions are as follows, for 1908:

I. FOR READING. Shakspeare's *The Merchant of Venice* and *Macbeth*; Sir Roger de Coverley Papers in the *Spectator*; Irving's *Life of Goldsmith*; Coleridge's *The Ancient Mariner*; Scott's *Ivanhoe* and *Lady of the Lake*; Tennyson's *Gareth and Lynette*, *Lancelot and Elaine*, and *the Passing of Arthur*; Lowell's *The Vision of Sir Launfal*; George Eliot's *Silas Marner*.

II. FOR STUDY AND PRACTICE. Shakspeare's *Julius Cæsar*; Milton's *Lycidas*, *Comus*, *L'Allegro*, and *Il Penseroso*; Burke's *Speech on Conciliation with America*; Macaulay's *Essay on Addison and Life of Johnson*.

For 1909, 1910 and 1911 the recommendations are as follows:

FOR READING.

GROUP I (two books to be selected): Shakspeare's *As You Like It*; Shakspeare's *Julius Cæsar*; Shakspeare's *The Merchant of Venice*; Shakspeare's *Twelfth Night*; Shakspeare's *Henry V*.

GROUP II (one book to be selected): Bunyan's *The Pilgrim's Progress*, part I; Bacon's *Essays*; The Sir Roger de Coverley Papers (in the “*Spectator*”); Franklin's *Autobiography*.

GROUP III (one book to be selected): Chaucer's *Prologue*; selections from Spenser's *Faerie Queene*; Pope's *The Rape of the Lock*; Goldsmith's *The Deserted Village*; Palgrave's *Golden Treasury* (first series), books II and III, with especial attention to Dryden, Collins, Gray, Cowper, and Burns.

GROUP IV (two books to be selected): Hawthorne's *The House of the Seven Gables*; Thackeray's *Henry Esmond*; George Eliot's

Silas Marner; Dickens's *A Tale of Two Cities*; Scott's *Ivanhoe*; Scott's *Quentin Durward*; Goldsmith's *The Vicar of Wakefield*; Mrs. Gaskell's *Cranford*; Blackmore's *Lorna Doone*.

GROUP V (two books to be selected): Emerson's *Essays* (selected); Ruskin's *Sesame and Lilies*; Irving's *Sketch Book*; Carlyle's *Heroes and Hero-worship*; De Quincey's *Joan of Arc* and *The English Mail Coach*; Lamb's *Essays of Elia*.

GROUP VI (two books to be selected): Palgrave's *Golden Treasury* (first series), book IV, with special attention to Wordsworth, Keats, and Shelley; Coleridge's *The Ancient Mariner*; Lowell's *The Vision of Sir Launfal*; Scott's *The Lady of the Lake*; Poe's *Poems*; Tennyson's *Gareth and Lynette*, *Lancelot and Elaine*, and *The Passing of Arthur*; Arnold's *Sohrab and Rustum*; Byron's *Mazeppa* and *The Prisoner of Chillon*; Longfellow's *Courtship of Miles Standish*; Browning's *Cavalier Tunes*, *The Lost Leader*, *How they Brought the Good News from Ghent to Aix*, *Evelyn Hope*, *Home Thoughts from Abroad*, *Home Thoughts from the Sea*, *Incident of the French Camp*, *The Boy and the Angel*, *One Word More*, *Herve Riel*, *Pheidippides*; Macaulay's *Lays of Ancient Rome*.

FOR STUDY AND PRACTICE.

Shakspeare's *Macbeth*; Milton's *Lycidas*, *Comus*, *L'Allegro*, and *Il Penseroso*; Burke's *Speech on Conciliation with America* or *Washington's Farewell Address* and Webster's *First Bunker Hill Oration*; Macaulay's *Life of Johnson* or Carlyle's *Essay on Burns*.

The work indicated in the preceding statements is intended to occupy three years of a high-school course, five recitations weekly; and it is intended that teachers shall be left free to secure the indicated results in whatever way may prove most suitable, and, in particular, to substitute for the books named others of equivalent literary value and of similar types, or to add others to the list. Hence, it is impracticable to describe or to define precisely what should be done in any one year or in any one term; but a few suggestions may be made, to be followed at discretion.

It is preferable to carry on the subjects side by side, in the proportion of two recitations a week devoted to composition, grammar, and rhetoric, to three devoted to literature; the study of composition to include the writing of one or two exercises every week, and the discussion of these exercises to be made the means of reviewing the principles of grammar as well as those of rhetoric; text-books to be used chiefly for reference, if at all.

GRAMMAR. If students do not enter the high school with such a practical knowledge of grammar as will enable them, on occasion,

to name and classify parts of speech, explain the structure of sentences, and state and apply principles, the subject should be further studied in connection with the work in composition, and, if necessary, there may be a brief formal review at some stage of the high-school course.

COMPOSITION AND RHETORIC. The text-book in rhetoric is to be regarded merely as an aid in the study of composition and of literature. Exercises in composition should be oral as well as written, and should be continuous through the high-school course. Subjects should be derived partly from the literature read by the class and partly from the student's own observation and experience. The order of advance may be: First, stories; the finding and shaping of descriptive and narrative material in easy, spontaneous expression. Second, essays; study of theme, plan, and paragraph. Third, the general principles of style; the sentence and the word. Fourth, the general principles of form—narrative and descriptive, expository and argumentative.

LITERATURE. Text-books in history, biography and criticism are merely incidental aids in the study of classics, and, like those in rhetoric, should rarely, if ever, be made subjects of formal recitation, except in reviewing. It is desirable that, of the books read in the high-school course in literature, those of modern authors shall be taken up first, and that the order of types shall be such as will coordinate the study with that of composition. American literature, if included, should precede English, and the prose of any period should precede its verse. Reading done at home should be preceded and followed by class discussions and reports. At the end of the course there should be a chronological review, with a good text-book, of all the work that has been done, with a brief survey of earlier periods.

The books named in the preceding standard lists may be tentatively arranged by years in the order following, and the study of composition coordinated as shown. The earlier reading will be more rapid, the latter more critical.

FIRST YEAR.

Literature—in class.—Silas Marner, in part, or general survey and class discussion; Vision of Sir Launfal; Essay on Addison; Life of Johnson.

Partly out of class.—Silas Marner, completed; Ivanhoe; Poems of Tennyson; The Ancient Mariner; Life of Goldsmith; Lady of the Lake. (Changes, additions or omissions at discretion.)

Composition.—Finding and shaping of material; stories, essays, paragraphs, letters, etc.

SECOND YEAR.

Literature.—Speech on Conciliation; minor poems of Milton; Sir Roger de Coverley Papers. (Other books at discretion.)

Composition.—The principles of style; sentences, words, paraphrase, etc.

THIRD YEAR.

Literature.—Macbeth; general review; Merchant of Venice; Julius Cæsar. (Other books at discretion; *e. g.*, Bunyan, Bacon, selections from English Bible.)

Composition.—The forms of discourse; general principles of narration and description, exposition and argument.

FOURTH YEAR.

Accredited high schools may offer a fourth year of English, if approved by the High-school Visitor; and the character of this unit or fourth year's work may be arranged with reference to the conditions of individual schools. A choice is offered of any one of the following three courses:

1. The time may be given chiefly to the study of English literature of the seventeenth century and earlier, beginning with a thorough historical survey of the field, and including the reading of Old English verse in translation, of selections from Chaucer and Spenser, and of seventeenth century classics, prose and verse, not included in the course of the first three years. With this study there should be regular essay writing, not less often than once a month.

2. The time may be given chiefly to the study of the principal forms of discourse, narrative and descriptive, expository and argumentative, with daily practice in adapting these to all purposes and occasions for which speaking or writing is demanded, with especial reference to purpose and occasion, and to the character of the person or public to be addressed. With this there should be a considerable amount of collateral study of literary selections illustrating the several types as they are taken up for practice.

3. The time may be given chiefly to the study of English language; beginning with elementary Old English grammar, prose composition, and readings from the simplest prose and verse. Then may follow the history of the English language and grammar after the Old English period, with attention to orthography, pronunciation, word composition and word derivation, inflections and syntax; and the course may be completed with the study of Middle English grammar, pronunciation, and selections from Chaucer. With this study there should be regular themes or essays, from once a week to once a month.

The third of these options is recommended wherever it is practicable to give it, and excellent text-books for it are available: Smith's Old English Grammar for the Old English part; Emerson's History of the English Language, or Champney's for the historical part, and, for the study of Middle English, Sweet's First and Second English Middle Primers or the school editions of Chaucer's Prologue and the Knightes Tale.

Entrance certificates must show in complete detail the nature of this fourth unit, if offered.

MATHEMATICS.

Four units (two and one-half required).

It is assumed that all candidates for admission to the University are proficient in the practical applications of arithmetic. The University recommends that the arithmetic in the upper grades be made more algebraic in character or that some elementary algebra be taught in the grades in the place of some of the more abstract topics in arithmetic. It also recommends that concrete geometry, under its own name or under the name of geometrical drawing, be taught in the grades.

The student must offer a minimum of two and one-half units, and may offer a maximum of four units in mathematics, in five subjects, as follows :

ELEMENTARY ALGEBRA. One and one-half units. The required one and one-half units of algebra shall consist of the four fundamental operations of algebra; factoring; determination of highest common factor and lowest common multiple by factoring; fractions; simple equations, both numerical and literal; simultaneous equations, both numerical and literal, containing two and three unknown quantities; radicals, including the extraction of the square root of polynomials and of numbers; exponents, including fractional and negative; quadratic equations, in one and two unknown quantities, both numerical and literal; ratio and proportion; binomial theorem for positive integral exponents; formulas for the n th term and the sum of the terms of arithmetic and geometric progressions, with applications.

Throughout the course the pupil should be required to solve numerous problems which involve putting questions into equations. Some of these problems should be chosen from mensuration, from physics, and from commercial life. The use of graphical methods and illustrations, particularly in connection with the solution of equations, is also required. The same credit will be given for the work if done partly in the grades and partly in the high school or if done wholly in the high school.

PLANE GEOMETRY. One unit. The usual theorems and constructions of good text-books, including the general properties of plane rectilinear figures; the circle and the measurement of angles; similar polygons; areas; regular polygons and the measurement of the circle. The solution of numerous original exercises, including loci problems, and the application to the mensuration of lines and plane surfaces is strongly insisted on. The first five books of Wentworth's Geometry (or an equivalent) will be accepted. This unit is required.

SOLID GEOMETRY. One-half unit. The usual theorems and constructions of good text-books, including the relations of planes and lines in space; the properties and measurements of prisms, pyramids, cylinders, and cones; the sphere and the spherical triangle; numerous original exercises, including loci problems and applications to the mensuration of surfaces and solids.

PLANE TRIGONOMETRY. One-half unit. Definitions and relations of the six trigonometric functions as ratios; circular measurement of angles; proofs of principal formulas, in particular for the sine, cosine and tangent of the sum and difference of two angles, of the double angle and the half angle, the product expressions for the sum or the difference of two sines or of two cosines, etc.; the transformation of trigonometric expressions by means of these formulas; solution of trigonometric equations of a simple character; theory and use of logarithms (without the introduction of work involving infinite series); solution of right and oblique triangles and practical applications. Problems should be solved by the use of tables of natural functions and also by use of tables of logarithms and logarithmic functions.

ADVANCED ALGEBRA. One-half unit. Permutations and combinations, limited to simple cases; complex numbers, with graphic representation of sums and differences; determinants, chiefly of the second, third and fourth orders, including the use of minors and the solution of linear equations; numerical equations of higher degree, and so much of the theory of equations, with graphic methods, as is necessary for their treatment, including Descartes' rule of signs and Horner's method, but not Sturm's functions or multiple roots.

Most candidates prefer to offer three units of mathematics for entrance; these three units should consist of the two and one-half units of required algebra and plane geometry and one-half unit of solid geometry or plane trigonometry.

As to the order in which the mathematical topics should be taught in the high schools, the following is to be recommended:

First Year. Elementary algebra, including a brief treatment of quadratic equations.

Second Year. Plane geometry completed.

Third Year. Solid geometry, first half-year; required algebra completed, second half-year.

Fourth Year. Plane trigonometry, first half-year; advanced algebra, second half-year.

It is important that students entering the University should come with the algebra fresh in mind. Schools that do not offer the fourth year in mathematics should teach the last third of the required algebra as late as possible in the course.

LATIN.

Three or four units.

First Unit. Beginner's Book. In all written exercises the long vowels should be marked, and in all oral exercises pains should be taken to make the pronunciation conform to the quantities. Students should be taught from the beginning to read the Latin aloud with intelligent expression.

The important things in this year are: First, a perfect knowledge of the paradigms; second, some practice in reading easy connected passages in preparation for the second year's work.

Second Unit. The first four books of Cæsar's Gallic War, or selections from Cæsar equivalent in amount to those books; and the equivalent of one period a week in prose composition. Selections from other prose writers, such as Nepos, may be taken as a substitute for one book of Cæsar, or an equivalent amount may be read in any of the "second-year books," provided at least two books of Cæsar are included.

The important things in this year are: First, a systematic drill on the more common case and mode uses; second, an intelligent comprehension of the matter read. The students should be able to give a good account of any of Cæsar's campaigns.

Third Unit. Six orations of Cicero, and the equivalent of one period a week in prose composition. The orations should include the four against Cataline and the Manilian Law. Sallust's Cataline may be substituted for the Manilian Law and a sixth oration.

The important things in this year are: First, a systematic drill in all Ciceronian case and mode uses; second, an intelligent comprehension of the contents of the orations.

Fourth Unit. The first six books of Vergil's *Æneid*, and the equivalent of one period a week in prose composition. An equivalent amount of Ovid may be substituted for part of the Vergil.

The important things in this year are: First, an intelligent appreciation of Vergil's story and art; second, a training in reading

the meter which will allow the student to read the Latin metrically with ease and expression; third, a study of the mythology. If the work of the first three years has been done well, syntactical drill should be confined almost wholly to the period devoted to prose composition.

Note.—When only three units are presented, it is preferred that they be the first, second, and third; but the first, second and fourth will be accepted. No combination of Cicero and Vergil will be accepted as a unit.

Latin Prose Composition. It will be noticed that prose composition is required throughout the last three years. One period a week may be devoted to it, or a smaller amount may be given each day. Such books as Bennett's and Jones's are recommended as giving the more systematic drill, but they should be supplemented by the occasional dictation of connected passages based on the text read. Such books as Daniell's and Moulton's will be accepted, but they need to be supplemented by a systematic study of the grammar. D'Ooge's Latin Composition is also good. If the book chosen does not give sufficient material for work in connection with Vergil, Nutting's Supplementary Latin Composition is recommended.

GREEK.

One, two or three units.

First Unit. Elementary Greek. White's First Greek Book or Gleason and Atherton's First Greek Book, or an equivalent. Thorough mastery of declensions and conjugations, and the main ideas of syntax. Xenophon's Anabasis begun, and twenty to thirty pages read. Goodwin's, Babbitt's or Goodell's Greek Grammar.

Second Unit. Xenophon's Anabasis continued into or through the fourth book, or an equivalent amount of other Attic prose. Review of inflections. Systematic study of syntax in the grammar. Practice in writing Greek based on the text read. Constant training in sight-reading.

Third Unit. Homer's Iliad or Odyssey, five to six books, exclusive of the Catalogue of Ships. Constant practice in reading at sight. Special attention to Homeric forms, vocabulary, and scansion. Attic prose composition once a week. Seymour's School Illiad. Perrin and Seymour's School Odyssey.

GERMAN.

One, two or three units.

First Unit. The elements of grammar (the first eighteen lessons of Carruth's Otis's Essentials of German Grammar), including: (1) Careful drill in pronunciation; (2) familiarity with German

script and text; (3) the memorizing of paradigms; (4) the writing, correction, memorizing and reciting after correction of all the English-German exercises in one of these grammars; (5) colloquial exercises daily to illustrate and fix the principles and the vocabulary introduced; (6) the memorizing of 100 lines of good German (popular songs or narrative prose). One-half year.

The reading and translation of about seventy-five pages of simple German (as in Carruth, Hewett, Joynes-Meissner Readers). This reading should involve the reading aloud of the German, the rendering into good idiomatic English, and question and answer in German upon what is read. Word-for-word translation should not be permitted, save when necessary to show the precise force of an idiom. One-half year.

The above work will require, if properly done, five forty-five minute periods weekly for thirty-five weeks. A wise plan is to begin with the grammar and carry this continuously for five or six weeks. Then introduce the reader; at first, one lesson a week, and then, after ten or twelve weeks, increasing the number of lessons from the reader until the grammar lessons have been completed and thoroughly reviewed.

Second Unit. Additional study of grammar, directed to the details of case government, use of the modal auxiliaries, of the subjunctive, and of word order. (The equivalent of lessons XIX to XXIV in Carruth's Otis's Essentials.) Practice in writing German from dictation, at least eighteen exercises (one a week for a half-year, to occupy fifteen to twenty minutes each).

Reading and translation of 100 pages of connected prose and of Schiller's Wilhelm Tell, complete. The 100 pages of prose may be made up from the remainder of Carruth's or Hewett's Reader, together with Zschokke's Der zerbrochene Krug, Heyse's Die Blinden or Anfang und Ende, Storm's Immensee, Andersen's Maerchen, Grimm's Maerchen.

Third Unit. Review of grammar, and the completion of Carruth's Otis, lessons XXV to XXX, with drill on the less usual strong verbs and on the idioms of tense and order. Composition work, consisting chiefly of paraphrases of the German used for translation.

Reading of 400 pages of standard German, with careful translation and critical understanding. (Some portion of what is translated should always be read aloud in German.) Suitable works are: Freytag's Die Journalisten and Lessing's Minna von Barnhelm; Fouque's Undine; Hauff's Das kalte Herz; Schiller's Der dreissig-jährige Krieg; Freytag's Doktor Luther; Riehl's Burg Neideck; Goethe's Hermann und Dorothea.

FRENCH.

One, two or three units.

First Unit. Rudiments of grammar; conjugation of the regular and the more usual irregular verbs; moods and tenses; use and position of pronouns; partitive constructions. Careful drill in pronunciation. Reading of 100 pages of easy prose. Practice in writing and speaking very simple sentences.

Second Unit. All the essentials of accidence and syntax. Composition. Frequent dictation. Oral exercises. Reading of 300 to 350 pages of modern French.

Third Unit. Thorough review of grammar. Written exercises based upon grammatical points, and connected writing. Dictation. Practice in hearing and speaking French. Reading of 600 pages of fairly difficult modern French.

PHYSICAL GEOGRAPHY.

One unit.

The course in physical geography should include a study of the following subjects:

1. The earth as a globe; shape of the earth, how proved; size, how measured; motions, how determined; map making; different modes of projection.
2. The ocean; forms and divisions; depth, density, temperature; ocean movements, waves and currents; character of ocean floor; life in ocean; tides, character and causes; shore-lines.
3. The atmosphere; chemical composition and how determined; pressure of, and how determined; circulation of, character and cause; storms, classification of, and cause.
4. Land, amount and distribution of; topographic charts; plains, kinds of, and development of; plateaus, kinds of, and development of; volcanoes, distribution and character of; rivers, life-history of; glaciers, kinds and characteristics of.

PHYSICS.

One unit.

The candidate's preparation in physics should include:

1. Recitations on at least one standard text, such as Carhart and Chute's High-school Physics, Wentworth and Hill's Text-book of Physics, or Student's Manual of Physics, by L. C. Cooley.
2. Experimental work, consisting of lecture-table demonstrations and individual laboratory work. The latter should comprise at least thirty-five exercises selected from such lists as are given

in Laboratory Manual of Physics, by Cheston-Dean-Timmerman, or Cooley's Manual, mentioned above.

CHEMISTRY.

One unit.

Preparatory work in this subject should cover practically the work done in course I in the University. The student should have a good knowledge of (1) modern chemical theories; (2) the most important facts of chemical science; (3) the practical applications of chemistry to every-day life and to the useful arts. It is important that elementary physics be thoroughly understood before taking up the study of chemistry. About two-fifths of the time devoted to chemistry should be spent in actual laboratory work by the students individually, and it is not sufficient if the instructor performs the experiments in the presence of the class. Any good text-book, such as Remsen's Introduction to the Study of Chemistry (sixth edition), Newth's Inorganic Chemistry, or Introduction to General Chemistry, by H. C. Jones, may be used. Some of the abridged text-books are too elementary to fulfil the requirements of the University.

BOTANY.

One unit.

A unit's course in botany should essentially follow the outline recommended in the Proceedings of the Seventh Annual Meeting of the North Central Association of Colleges and Secondary Schools. Detailed directions for such a course are given in Ganong's The Teaching Botanist, Stevens's Introduction to Botany, and Bergen's Foundations of Botany. Not less than two-thirds of the time should be devoted to laboratory work, and the remainder to recitations and discussions. Field excursions should be made, so that the students may know in their natural surroundings the plants already studied in the laboratory. Careful drawings and notes should be required in connection with the laboratory work.

ZOOLOGY.

One unit.

Acceptable work in zoölogy must be of such a character that at least two-thirds of the time is spent in individual study of type specimens. The value of the study rests in the training given in independent observation and correlation of facts, and in the accurate recording of these facts by drawings and notes. Comparative work is of the greatest importance. The arthropods are the best group in Kansas upon which to work, and it is suggested that they be used to exemplify the general principles of structural relations

and classification. For a laboratory guide, Marshall and Hurst's Practical Zoölogy is recommended, and as a text-book, Parker and Haswell's Manual of Zoölogy. Where much of the time is devoted to the study of insects, Hunter's Elementary Studies in Insect Life may be used as a guide, and Comstock's Manual of Entomology and Weed's Life-histories of American Insects as reference books.

PHYSIOLOGY.

One unit.

To encourage the more systematic teaching of this important subject, the University will accept it as an entrance unit, but provided only that the study occupies a full year of high-school time, and is taught by laboratory method and by specially prepared instructors.

In presenting this subject, about one-half of the time should be employed in laboratory work and the remainder of the time in recitations. To insure the best results and to cultivate the power of observation and expression, neat and correct drawings properly labeled and accompanied by intelligent notes should be made of each subject, demonstration or experiment studied.

Martin's Briefer Course of the Human Body or Colton's Experimental and Descriptive Physiology are recommended as text-books.

GREEK AND ROMAN HISTORY.

One unit.

If four years of history are offered in the high school, it is recommended that Greek and Roman history, with some preliminary study of the earlier nations, be given in the first year; otherwise, as early as possible. In selecting a text the teacher will do well to examine Morey, West's Ancient World, Wulfson, Myers, and Botsford.

MEDIÆVAL AND MODERN EUROPEAN HISTORY.

One unit.

This should, if possible, succeed the course in ancient history, and precede that in English history. If English history is not offered separately, some special stress may be laid upon it in this course. Many excellent text-books have recently appeared on this subject. Among these are Munro and Whitcomb, Bourne, West, Myers, and Robinson.

ENGLISH HISTORY.

One unit.

In a four-year course English history should be offered in the third year; otherwise it should, at any rate, precede American history. There are numerous text-books on the subject. Besides that recommended for state use, Channing and Higginson, there are Corman and Kendall, Walker, Cheyney, Wrong, Larned, Montgomery and Andrews.

Note.—Attention should be given, in the three courses above, to geography, some outside reading, and the taking of notes. The use of outline maps to be filled in by the students is especially recommended. In all good text-books will be found lists of references to books desirable for a school library. The Report of the Committee of Seven should also be consulted. But the department does not urge that the division between ancient and mediæval history be fixed at 800 A. D.

AMERICAN HISTORY.

One unit.

This is the course recommended by the Committee of Seven of the American Historical Association in their report on the study of history in schools. In order to receive entrance credit, the course must not be given before the third year in the high school, and must be based upon some such approved text as Channing's Student's History of the United States or McLaughlin's History of the American Nation.

ECONOMICS.

One unit.

The general principles of economic science, with some of its applications. The instructor, as far as possible, should approach the subject from the concrete rather than from the abstract, and should verify every principle by practical examples. Blackmar's Economics (or its equivalent) should be used as a text and guide. Special attention should be given to books II and III. Chapters II and III of book I and chapters I, II and III of book III require special analysis by the instructor.

A limited amount of collateral reading should be required, and easy investigations of local economic conditions should be advised.

ADMISSION TO ADVANCED STANDING.

The regulations governing admission to advanced standing in the College are administered by a committee of the Faculty, which examines into the merits of each case presented to it and either credits the applicant with a certain rank or recommends him to the heads of departments for advanced credit or examination.

Application for such advanced standing must be made at the time of matriculation.

Undergraduates from other colleges must present certificates of honorable dismissal, or other satisfactory evidence of good character.

Some of the requirements of the College are indicated as follows:

I. BY EXAMINATION. A candidate may be admitted to the Sophomore, Junior or Senior class, if he appear on examination to be prepared in the following studies: (1) In the studies required for admission to the Freshman class. (2) In all such studies as he would have pursued if he had entered at the beginning of the course.

All applications for examination for advanced standing must be made during the opening week of the first term. College credit will be given for work done in preparatory schools upon examination only. The times and place of such examinations are the same as listed on page 81.

II. WITHOUT COMPLETE EXAMINATION. Graduates or students from the higher classes of other colleges may be admitted to advanced standing upon presentation of a certificate stating in detail the work done, under such conditions as the Faculty may determine to be just in each case, upon consideration of the applicant's previous course of study and of the evidence he presents of his proficiency in that course.

It is required of all candidates for the bachelor's degree who have entered the University on advanced standing from other colleges that they do not less than thirty hours of Junior or Senior work in residence at the University.

Students leaving the University before obtaining the bachelor's degree, who have spent three full years in residence at the University, and lack but fifteen hours of graduation, may receive not to exceed fifteen hours' credit from an institution of equal standing, provided they receive the bachelor's degree or a higher degree from such institution.

SPECIAL STUDENTS.

Opportunity is given in the College for the admission of persons of mature years who desire to pursue some special line of work, without following any prescribed course or becoming candidates for a degree.

The admission of such special students is directly under the control of a committee of the Faculty, whose certificate of acceptance must be presented to the Registrar before registration. Applicants for classification as special students must present satisfactory evidence of proper preparation for the studies desired and must also meet such other requirements as may be fixed by the Faculty.

REGISTRATION AND ENROLMENT.

All candidates for admission having certificates from accredited schools and all students of the College intending to pursue their studies during the ensuing year must present themselves for registration at the University on September 18 to 21, inclusive, 1907. Registration at a later date will be permitted only on the presentation of a satisfactory reason for the delay.

The Dean of the College is charged with the execution of all University and Faculty rules relating to the enrolment of students in classes and their choice of studies.

TIME OF APPLICATION FOR ENROLMENT. At least two weeks before the end of each term, all students in residence are required to file with the Dean applications for enrolment in the courses which they desire to pursue during the following term.

COMPLETION OF REQUIREMENTS. A student may not be enrolled in any course in advance of any other which he has yet to take, and which it is possible for him to carry at the time.

EXAMINATIONS.

Examinations will be held for all students during the regular recitation hours of the last days of the term (or half-term), each class in its proper recitation hour; they may occupy not more than one hour for each hour per week that the course has occupied. Examinations shall be held for all classes on the last day of the examination period.

Special examinations will be given only during examination weeks and during the opening week of the fall term.

All requests for special examinations must be approved by the Dean.

FAILURES. All failures in examinations must be made good at the earliest possible date, not more than one year from date of the failure. If not made good by the time of the recurrence of the course, the work must be done in class.

Absence from examination or failure in more than one-third of his work, in any one term, severs a student's connection with the University.

CONDITIONS. A student who has failed to pass in any course may be conditioned upon the same by the Dean, if in the opinion of the instructor it can be made good by the next examination period without detriment to the regular work of the student. A condition which is not made up at the next examination period is placed again in the list of failures.

Inadequate Preparation. When students show by their current work insufficient entrance preparation in any study, they may be required to make good such deficiency in any manner prescribed by their instructors.

SCHOLARSHIPS.

The following scholarships are offered to students in the College :

1. The Lucinda Smith Buchan Memorial Scholarship. Established by the alumnae members of the Pi Beta Phi sorority. A loan of \$200 for three years without interest. Open to young women of the Junior and Senior classes of the College. Held in 1906-'07 by Miss Ruby Jackson, of Lawrence, Kan.

2. The Marcella Howland Memorial Scholarship. Sixty dollars a year. Open to young women of the Junior and Senior classes of the College. Held in 1906-'07 by Miss Cora E. Dolbee, of Lawrence, Kan.

3. The Kansas City Branch of the Association of Collegiate Alumnae Scholarship. Two hundred dollars a year. Awarded to young women, who are chosen from graduates of the Kansas City high school. Held in 1906-'07 by Miss Mabel Eggleston, of Kansas City, Mo.

4. A research table in the Marine Biological Laboratory, at Woods Hole, Mass., supported by Mrs. Sara T. D. Robinson, is open to women of the University who have specialized in the sciences and given evidence that they are fitted to make the best use of it. Held in 1906-'07 by Miss Ella Weeks, of Manhattan, Kan. Application for the use of this table should be sent Mrs. Sara T. D. Robinson, Oakridge, Lawrence, Kan.

MEMORIAL FUND.

May Sexton Agnew Memorial Fund. A fund of \$500 has been given the library of the University by the Kappa chapter of Kappa Alpha Theta fraternity. The income of this fund is to be devoted to the purchase of books in English literature.

TEACHER'S DIPLOMA.

The teacher's diploma of the University may be given to A. B., A. M. and Ph. D. graduates of the University on the following conditions:

1. SPECIAL KNOWLEDGE. The completion of at least twenty hours of college work in the subject, or the closely allied subjects, that the candidate proposes to teach; the ultimate decision as to the candidate's proficiency to rest with the head of the department in which the major work is taken.

2. PROFESSIONAL KNOWLEDGE. The completion of twelve and one-half hours' work in the department of education.

3. AMOUNT OF WORK OFFERED. The candidate for the A. B. degree, who is at the same time a candidate for the teacher's diploma, shall be required to offer five hours of additional undergraduate work.

4. GRADE OF SCHOLARSHIP. The teacher's diploma shall be granted only to graduates whose scholarship in all of their undergraduate class work averages at least grade II.

On presentation of the University teacher's diploma, the State Board of Education will issue a three-years' state teachers' certificate. At the expiration of the three-years' certificate, a life certificate will be issued, if the candidate has taught successfully during two of the three years.

EXPENSES.

By legislative enactment, the following fees must be charged each student of the College of the University, in lieu of all other fees of each school year, payable at the time of matriculation:

Matriculation fee, payable but once.....	\$5 00
Incidental fee, payable annually.....	10 00

To students residing in states or territories other than Kansas, the fees charged must be as follows:

Matriculation fee, payable but once.....	\$10 00
Incidental fee, payable annually.....	20 00

At graduation, a diploma fee of five dollars is required.

LABORATORY SUPPLIES AND FEES. All the laboratories of the University and their equipment of power, engines, machinery, desks, tables, balances, microscopes, models and complete apparatus are at the disposal of students, under the direction of their instructors. These desks, benches and tables will be further provided with individual sets of tools, sets of working apparatus, and equipment. At the end of the course, or earlier at the discretion of the instructor, all the individual equipment in good order must be returned. Such as may have been lost, damaged, broken or destroyed by the student is to be paid for by him at that time.

Material and apparatus of every kind consumed, wasted, lost or broken in the manifold experiments and practices in laboratories must be paid for by the student.

For the economic and prompt supply of such material, coupon books, are furnished at the business office, in amounts of one, two and five dollars. Any coupons unused are redeemable in cash at the Secretary's office when the student has completed the course and checked in his individual equipment.

OTHER EXPENSES. There are no dormitories connected with the University. Students find accommodations in the boarding-houses and homes in Lawrence. Information concerning the location of rooming- and boarding-places may be had at the office of the Registrar.

The average price of board, rooms, light and fuel may be placed at \$4 a week. Some persons who furnish plain rooms and good, plain food receive students at \$3 a week. Day board in private families and at city restaurants may be obtained for \$2.75 to \$4 a week. Day board in clubs varies from \$2.50 to \$3 a week. Furnished rooms, usually occupied by two students, range from \$4 to \$15 a month. Unfurnished rooms rent for \$1.50 to \$3 a month. Students who can supply their own furniture and buy and prepare provisions for the table themselves can attend the University for very little cost in money.

The following table shows the estimated expenses of a student of the College for a year, excluding clothing and traveling expenses; the expense varies with the course pursued, and also depends upon the tastes and habits of the student :

	<i>Low.</i>	<i>Average.</i>
Board.....	\$100 00	\$120 00
Room	20 00	40 00
Books and stationery....	8 00	15 00
Laundry	8 00	20 00
Matriculation and { other fees }	15 00	15 00
Incidentals.....	15 00	50 00
Totals.....	\$166 00	\$260 00

APPROVED ROOMING-PLACES. By order of the Board of Regents of the University, the Registrar keeps a list of approved rooming-houses which is made up of those rooming-houses only whose proprietors agree to confine their roomers to one sex, and to provide a sitting-room in case their rooms are occupied by young women. This list is called to the careful attention of parents whose daughters are about to enter the University.

SELF-HELP. Many students find work in private families, in offices, and in various occupations, by means of which they defray a portion of their expenses. Some students have earned their entire expenses while in attendance, and have made good records at the same time; other students have done so much work that they have not been able to keep up their studies, and have thus missed the one thing for which they came. If it is possible for the student to have a part of his expenses paid, he should not attempt to earn his way entirely by his own exertions. The University cannot guarantee work to any student, but will lend every possible assistance in finding employment. The University maintains an employment bureau, where the names of those seeking work and of those desiring workers are recorded. Students desiring places where they may help themselves are advised to apply to the Registrar of the University or to the University Y. M. C. A. or Y. W. C. A.

THE COURSE OF STUDY

Leading to the Degree of Bachelor of Arts.

AMOUNT OF WORK REQUIRED.

To secure the degree of bachelor of arts the candidate is required to have completed 126 hours of work, of which 120 hours must be regular class work. The six additional hours required must be distributed as follows:

In the Freshman year, one hour of hygiene and one hour of gymnasium practice, the first term; and two hours of gymnasium practice the second term. In the Sophomore year, one hour of gymnasium practice in each term.

The sixty hours of class work required during the Freshman and Sophomore years must be distributed according to the plan described below.

The sixty hours of class work required during the Junior and Senior years may be elected by the candidate without any restriction, except that not more than twenty hours may be taken under one instructor.

AMOUNT OF WORK TO BE CARRIED AT ONE TIME.

Students of the College must be enrolled in not less than fourteen nor more than eighteen hours of work, but all applications for enrolment are subject to the approval of the Dean.

When the past record or current work of a student indicates that he is unable to carry advantageously the amount of work permitted by the above regulation, he may be limited in his enrolment to such extent as may be considered just in his case.

The Faculty urgently advises students to confine themselves to the average number of fifteen hours of class work, and thus devote four full years to the completion of their undergraduate work. Experience has shown that the crowding of the undergraduate course results in serious loss in the quality of the work accomplished. The excess over fifteen hours permitted by the rule should be used for making up entrance deficiencies.

REQUIRED AND ELECTIVE COURSES.

The University regards the work of the first two years of the College course as essentially connected with the preparatory work as preliminary fundamental work necessary to the more specialized

courses of the last two years. The preparatory work and the work of the Freshman and Sophomore years are, therefore, considered together.

Fifteen units are required for admission, as given in detail on page 83. Of these fifteen preparatory units five and one-half are specifically required, six are required by group, while the remaining three and one-half are chosen without restriction from the list of entrance subjects.

During the first two years in the College sixty hours of class work, fifteen each term, must be completed. Five hours of such work constitute what is known as a "College unit." Three College units constitute the class work of each term. These twelve College units added to the fifteen entrance units make a total of twenty-seven units which must be completed, in the preparatory school and the College, before the end of the Sophomore year.

Of the twelve College units to be completed during the Freshman and Sophomore years, one, elementary rhetoric, is specifically required, unless it is offered for entrance as a fourth year of English. The remaining eleven units are to be chosen from the courses open to Freshmen and Sophomores on the conditions that not more than twenty hours may be taken in one department and that from each group a certain number of units must have been completed, either in the preparatory school or the College, before the end of the Sophomore year. The number of units so required is given with the names of the groups in the table on a following page.

A course may not be chosen which substantially duplicates the work of a course which has been offered for entrance credit.

MEDICAL COURSES FOR COLLEGE STUDENTS.

A student of the College, having attained full Senior standing, may elect all of the work of his Senior year from the curriculum of the School of Medicine and have the same credited toward the A. B. degree. To secure this privilege the candidate must register in the School of Medicine as well as the College during his Senior year, and must complete all the work of the second year of the course in medicine.

Candidates for both A. B. and M. D. degrees who desire to avail themselves of the foregoing regulation must have registered in both the College and the School of Medicine during their Junior year and have completed those courses which are common to the curriculum of the College and the curriculum of the School of Medicine.

LAW COURSES FOR COLLEGE STUDENTS.

A student of the College, having attained a full Senior standing, may elect not to exceed one-half of the work of his Senior year, or fifteen hours, from the curriculum of the School of Law and have the same counted toward the A. B. degree. To secure this privilege the candidate must register in the School of Law as well as the College during his Senior year, and must confine his election to the first year of the curriculum of the School of Law.

COURSES IN BUSINESS

IN ITS HIGHER RELATIONS.

Leading to General Business, Banking, Insurance, and Journalism.

The following courses do not in any sense form a school of commerce or business, nor is such a school contemplated. They are organized within the College of the University. They are not, except as to the regular required work of all students in the College, required courses, but are made up of the electives open to all students alike.

The courses are designed, however, to offer to the large number of men who enter business from the University somewhat the same definite assistance that it gives those who are to be engineers, lawyers, etc. This has been made possible by a large development of late years of special courses in language, history, mathematics, sociology, and economics. It is not expected that the University can do more than to organize into programs of study leading to definite ends such courses as now may be offered, and such others, few in number, as it may be possible to add. The University does not seek to furnish that large portion of business training which can come only from experience. It undertakes to give the fundamental and specialized courses of study that illustrate the economic forces that control the business world. It aims at the same time to give the cultural training which is indispensable to the thoroughly enlightened citizen.

LECTURES.

In addition to the regular classroom work, lectures will be given by men eminent in the profession or calling which they represent. The lectures will have for an object the illustrating from experience of the theory presented in the classroom, and of the relation of the fundamental principles enumerated in the courses to actual experience. Students in these courses will be expected to attend the lectures.

GRADE OF THE WORK.

The following courses are therefore based upon the requirements for entrance to the College, and also upon the required work of the Freshman and Sophomore years. The remaining work is in the main definitely suggested for the guidance of the student in his choice of subjects. It is also rather more exacting in its requirements than the average work elected by students.

COURSES OF STUDY.

Freshman and Sophomore Years, in All Courses.

In the Freshman and Sophomore years, the courses in general business, insurance, banking and journalism are alike, except that in the Sophomore year of the course in journalism are required two courses in newspaper reporting (English language, 3 and 4).

REQUIREMENTS.

1. Students entering these courses must have met the requirements for admission to the Freshman class of the College.

2. Students entering these courses must do also all the required work of the Freshman and Sophomore years, as laid down in this catalogue.

3. After doing the required work of the Freshman and Sophomore years, thirty hours of work remain in those years, which should be so distributed that not less than three hours of work are taken in each of the following subjects:

English.

Foreign Language.

Physical Science (Physics if not taken in high school and if Insurance is wanted).

Biological Science.

Elements of Economics.

European History.

Mathematics.*

COURSES IN GENERAL BUSINESS.

JUNIOR YEAR.

First Term:

American Jurisprudence and Elementary Law, or Contracts.
Five hours.

History of Commerce and Commercial Geography. Three hours.

Elements of Sociology. Three hours.

Foreign Language, or English. Two or three hours.

Physical Science, or Mathematics. Three or two hours.

Second Term:

Financial History of the United States. Three hours.

Economic Resources and Activities of European Countries. Two hours.

Constitutional Law. Three hours.

*Students entering the Freshman class with plane trigonometry, or who take plane trigonometry in the Freshman year, may take surveying here.

International Law. Two hours.
English, or Foreign Language. Three or two hours.
Mathematics, or Physical Science. Two or three hours.

SENIOR YEAR.*First Term:*

Public Finance. Three hours.
Corporate Finance. Two hours.
Social Pathology. Two hours.
Transportation. Two hours.
Labor Problems and History of Trades-unionism. Three hours.
History, English, Foreign Language, or Physical Science. Three hours.

Second Term:

Transportation. Three hours.
Accounting. Two hours.
Social and Economic Statistics. Two hours.
European History of the Nineteenth Century. Three hours.
Foreign Language, or English. Two hours.
Administration of Charitable and Penal Institutions (Social Path. con.) Three hours.

COURSE IN BANKING.**JUNIOR YEAR.***First Term:*

American Jurisprudence and Elementary Law, or Contracts. Five hours.
Money and Credit. Two hours.
History of Commerce and Commercial Geography. Three hours.
Foreign Language, or English. Two or three hours.
Mathematics, or Physical Science. Three or two hours.

Second Term:

Banking. Two hours.
Financial History of the United States. Three hours.
Constitutional Law. Three hours.
International Law. Two hours.
English, or Foreign Language. Two or three hours.
Physical Science, or Mathematics. Three or two hours.

SENIOR YEAR.*First Term:*

Public Finance. Three hours.
Corporate Finance. Two hours.
Transportation. Two hours.
Labor Problems and History of Trades-unionism. Three hours.
Presidential Administrations. Five hours.

Second Term:

Economic Resources and Activities of European Countries. Two hours.

Transportation. Three hours.

Accounting. Two hours.

European History of the Nineteenth Century. Three hours.

Presidential Administrations. Five hours.

COURSE IN INSURANCE.

JUNIOR YEAR.

First Term:

American Jurisprudence and Elementary Law, or Contracts. Five hours.

Money and Credit. Two hours.

Foreign Language, or English. Two or three hours.

Physical or Biological Science. Three or two hours.

Mathematics. Three hours.

Second Term:

Banking. Two hours.

Financial History of the United States. Three hours.

Physical or Biological Science. Two or three hours.

English, or Foreign Language. Two hours.

Mathematics. Three or two hours.

Building Materials. Three hours.

SENIOR YEAR.

First Term:

Law of Insurance and Agency. Five hours.

Public Finance. Three hours.

Corporate Finance. Two hours.

History of Commerce and Commercial Geography. Three hours.

Transportation. Two hours.

Second Term:

Transportation. Three hours.

Insurance. Three hours.

Accounting. Two hours.

Social and Economic Statistics. Two hours.

Economic Resources and Activities of European Countries. Two hours.

English, or Foreign Language. Three hours.

COURSE IN JOURNALISM.

The design of this course is to give a working understanding of the duties of the newspaper office, with drill in the actual preparation of "copy" for the press and the editing of the same. In the

newspaper-writing section the various departments of the paper are taken up, discussed both by the instructors and by newspaper men from outside papers, and actual writing is required to show familiarity with the principles of journalism. The city papers and the University papers are furnished with news matter, and actual practice is thus secured. The Senior year includes also editorial work in the revising and editing of "copy" prepared by beginners. The duties of every editorial department of a newspaper are practiced in class and in exercises on which careful preparation is required. Assignments to work on the city papers are on occasion filled by members of the Senior class who show proficiency. Frequent lectures by editors and newspaper writers assist materially in giving a clear understanding of the needs of the profession.

JUNIOR YEAR.

First Term:

American Colonial History. Five hours.

Elements of American Jurisprudence (a). Two and one-half hours.

Elementary Law (b). Two and one-half hours.

Advanced English Composition. Two or three hours.

Ethics, Economic History of England, or English or other Literature. Two or three hours.

Second Term:

Constitutional Law. Three hours.

International Law. Two hours.

English or other Literature. Three or two hours. (See Eng. Lit. 12.)

Advanced English Composition. Two or three hours.

Economic History of the United States. Three hours.

Ethics, Banking, or Economic Resources and Activities of European countries. Two hours.

SENIOR YEAR.

First Term:

Newspaper Writing. Three hours.

English Literature. Two hours.

American History. Five hours.

Elements of Sociology, or Public Finance. Three hours.

Social Pathology, or Corporate Finance. Two hours.

Second Term:

Newspaper Writing. Two hours.

English Literature. Three hours.

American History. Five hours.

Social Pathology (continued), or Financial History of United States. Three hours.

Social and Economic Statistics, or Elements of Sociology (con.) Two hours.

PUBLIC LECTURES, 1906-'07.

Course in Newspaper Writing.

- SEPTEMBER 24, 1906. C. M. Harger, "Newspaper English and Copy."
- OCTOBER 5. Ralph Tennal, *Sabetha Herald*, "Reporting and the Reporter."
- OCTOBER 11. Roy Tapley, *Lawrence World*, "Elements of Reporting."
- OCTOBER 12. William Allen White, *Emporia Gazette*, "The Ethics of the Newspaper."
- OCTOBER 23. C. M. Harger, "Local News."
- NOVEMBER 16. H. J. Haskell, *Kansas City Star*, "The City Editor."
- NOVEMBER 20. C. M. Harger, "Telegraph News."
- NOVEMBER 23. Oliver Laing, *Kansas City Star*, "The Telegraph Editor."
- DECEMBER 7. J. E. House, *Topeka Capital*, "Liveliness in a Newspaper."
- DECEMBER 14. C. E. Ingalls, *Washington Republican-Register*, "The Country Weekly."
- JANUARY 11, 1907. C. S. Finch, *Lawrence Gazette*, "How to Write Editorials."
- JANUARY 15. C. M. Harger, "Editorial Writing."
- JANUARY 18. Homer Hoch, *Marion Record*, "The Country Newspaper, Locally and Editorially."
- JANUARY 25. D. A. Valentine, *Clay Center Times*, "Careful English in Newspaper Writing."
- FEBRUARY 8. Harold T. Chase, *Topeka Capital*, "Preparation for Newspaper Work."
- FEBRUARY 12. C. M. Harger, "The Editorial Departments."
- MARCH 1. Ewing Herbert, *Brown County World*, "What People Like to Read."
- MARCH 7. Prof. C. S. Skilton, "Musical Criticism."
- MARCH 15. Mrs. Cora G. Lewis, "Woman's Part in the Day's Work."
- MARCH 18. C. M. Harger, "The Interview."
- MARCH 25. Prof. E. G. Frazier, "Dramatic Criticism."
- MARCH 29. John MacDonald, *Western School Journal*, "Newspaper English."
- APRIL 4. Prof. F. N. Raymond, "The Paris School of Journalism."
- APRIL 5. J. L. Brady, *Lawrence Journal*, "Editorial Work."

- APRIL 11. William Allen White, *Emporia Gazette*, "How to Avoid Conventionality in Writing."
- APRIL 19. Charles Elwell, "A Foreign Correspondent."
- APRIL 26. Prof. W. C. Lansdon, "Preparation for Newspaper Work."
- MAY 7. C. M. Harger, "Proof-reading."
- MAY 10. Florence Johnstone, *Topeka State Journal*, "The Society Reporter."
- MAY 17. Charles F. Scott, *Iola Register*, "Principles of Newspaper Editing."
- MAY 27. C. M. Harger, "Opportunities."

COURSES IN DOMESTIC SCIENCE.

The University offers for next year a few courses in domestic science. These courses are of strictly University grade, and, if experience warrants, will be added to as time goes on until a fully formulated course results. The work is organized within the College and the courses given are on the same plane as other elective courses. Students electing such work must conform to all requirements for entrance to the Freshman class of the College, and must do all the required work of the Freshman and Sophomore years. The work in the main is open to Juniors and Seniors only.

The following courses will be offered for the year 1906-'07:

HOUSEHOLD ARCHITECTURE. To include, among other things, sanitation, ventilation, decoration, etc., together with lectures upon trees, plants, and grounds. One term.

PHYSIOLOGY AND HYGIENE. To include, among other things, simple applied therapeutics, treatment of accidents, the principles of nursing, etc. One term.

SOCIOLOGICAL AND HISTORICAL STUDY OF THE FAMILY. One-half term.

BACTERIOLOGY. To include a treatment of the more important bacteria of food and water, and the prevention of the spread of infectious diseases. One-half term.

PHYSICAL EDUCATION, THEORY AND PRACTICE. To include, among other things, the physiology of childhood and the physical education of children.

CHEMISTRY AND PHYSIOLOGY OF FOODS. To include, among other things, dietetics, balanced rations, standard supplies, and full laboratory work. One term.

TABLE OF COURSES OPEN TO FRESHMEN AND SOPHOMORES. FIRST TERM.

GROUP.	Department.	No.	Course.	Hrs.	Days.	Time.
ENGLISH GROUP: Four units required in preparatory school or College.	English Language.	1	Rhetoric.....	2	T., T.	8, 9, 10.15, 11.15, 4.30.
		3	Newspaper Reporting.....	2	T., T.	10.15.
	English Literature.	1	English Literature.....	3	M., W., F.	8, 9, 10.15, 11.15, 4.30.
MATHEMATICS GROUP: Three units required in preparatory school or College.	Public Speaking.	3	Eighteenth Century Literature.....	5	Daily.	11.15.
		1	Spoken Discourse.....	3	M., W., F.	8, 9, 10.15.
		2	Argument and Debate.....	2	T., T.	8, 9, 10.15.
PHYSICAL SCIENCE GROUP: Three units required in preparatory school or College.	Mathematics.	2	College Algebra.....	3	M., W., F.	8, 9, 11.15, 2.30, 3.30.
		3	Plane Trigonometry.....	2	T., T.	8, 9, 11.15, 2.30, 3.30.
		4	Analytic Geometry I.....	2	T., T.	10.15, 11.15.
		5	Calculus I.....	3	M., W., F.	10.15, 11.15.
		6	Analytic Geometry II.....	2	T., T.	10.15, 11.15.
		7	Calculus II.....	3	M., W., F.	10.15, 1.30.
		8	Calculus III.....	2	T., T.	9.
	Chemistry.	2	Inorganic Chemistry.....	5	Daily.	8.*
BIOLOGICAL SCIENCE GROUP: Three units required in preparatory school or College.	Physics.	1	Elementary Physics.....	5	Daily.	9.
		3	General Physics.....	5	Daily.	10.15.
	Geology.	1	<i>Elementary Geology</i>	5	Daily.	11.15.
HISTORICAL GROUP: Two units required in preparatory school or College.	Zoology.	1	Elementary Zoology I.....	5	Daily.	1.30 to 3.30.
	Botany.	2	Plant Histology.....	5	Daily.	1.30 to 3.30.
	Physiology.	1	Physiology.....	5	Daily.	1.30.
	Philosophy.	1	<i>Elementary Psychology</i>	3	M., W., F.	9.
		2	<i>Introduction to Philosophy</i>	2	T., T.	9.
HISTORICAL GROUP: Two units required in preparatory school or College.	European History.	1a	English History.....	2	T., T.	8, 9.
		1b	English History.....	3	M., W., F.	8, 9.
		3	Greek History.....	2	T., T.	9, 11.15.
	American History.	5	Medieval History I.....	3	M., W., F.	8, 9.
		1	American History I.....	3	M., W., F.	9.
Economics.		3	American Government I.....	2	T., T.	9.
		1	Elementary Economics.....	5	Daily.	3.30.
		2	Economic History of England.....	3	M., W., F.	9.

NOTE.—Courses printed in italics are not open to Freshmen.

* Laboratory work, Tuesday and Thursday, at 8 to 10 or 1.30 to 3.30.

TABLE OF COURSES OPEN TO FRESHMEN AND SOPHOMORES. FIRST TERM—concluded.

Group.	Department.	No.	Course.	Hrs.	Days.	Time.
FOREIGN LANGUAGE GROUP: Six units required in preparatory school or College.	Latin.	2	Cicero's Orations.....	5	Daily.	11.15.
		3	Vergil.....	5	Daily.	8.
		4	Cicero's De Senectute and Livy..	3	M., W., F.	9, 1.30.
		5	Grammar and Composition.....	3	T., T.	9.
		6	Horace's Odes.....	3	M., W., F.	11.15.
		8	Cicero's Letters.....	3	M., W., F.	10.15.
		9	History of Roman Literature....	2	T., T.	10.15.
	Greek.	1	Elementary Greek.....	5	Daily.	9.
		3	Homer's Iliad.....	3	M., W., F.	10.15.
		4	Thucydides.....	2	T., T.	10.15.
		7	Apology and Crito.....	3	M., W., F.	11.15.
		8	Sophocles.....	2	T., T.	11.15.
		19	Greek in English.....	3	M., W., F.	10.15.
		22	New Testament Greek II.....	2	T., T.	10.15.
		27	Greek Art I.....	1	T.	4.30.
	German.	1	Outline of Grammar.....	5	Daily.	8, 9, 10.15, 11.15, 2.30, 1.30-3.30.
		2	German Reader.....	5	Daily.	2.30.
		3	German Prose.....	5	Daily.	8, 9, 10.15, 11.15, 3.30.
		4	Schiller's Wallenstein.....	5	Daily.	1.30.
		5	Composition.....	3	M., W., F.	10.15.
		9	Goethe's Iphigenie.....	2	T., T.	11.15.
		10	Lessing's Nathan der Weise.....	3	M., W., F.	11.15.
		11	Schiller's Die Braut von Messina.	2	T., T.	10.15.
	French.	1	Elementary French I.....	5	Daily.	8, 9, 10.15, 11.15, 1.30.
		2	Elementary French II.....	5	Daily.	9.
		3	Modern French Prose.....	3	M., W., F.	9, 10.15.
		4	Composition.....	3	T., T.	9.
		5	French Prose and Poetry.....	3	M., W., F.	10.15.
		8	Moliere.....	3	M., W., F.	11.15.
		9	Composition and Conversation....	2	T., T.	11.15.
	Spanish.	1	Elementary Spanish I.....	5	Daily.	10.15, 11.15.
		2	Elementary Spanish II.....	5	Daily.	2.30.
		3	Modern Spanish.....	3	M., W., F.	2.30.
		4	Composition.....	2	T., T.	2.30.
	Music.	1	Musical Appreciation.....	1	M.	2.30.

TABLE OF COURSES OPEN TO FRESHMEN AND SOPHOMORES. SECOND TERM.

GROUP.	Department.	No.	Course.	Hrs..	Days.	Time.
ENGLISH GROUP: Four units required in preparatory school or College.	English Language.	2	Rhetoric.....	3	M., W., F.	8, 9, 10.15, 11.15, 3.30.
		4	Newspaper Reporting.....	3	M., W., F.	10.15.
	English Literature.	2	English Literature.....	2	T., T.	8, 9, 10.15, 11.15, 3.30.
		3	Eighteenth Century Literature...	5	Daily.	8, 11.15, 2.30.
	Public Speaking.	1	Spoken Discourse.....	3	M., W., F.	8, 9, 10.15.
MATHEMATICS GROUP: Three units required in preparatory school or College.		2	Argument and Debate.....	2	T., T.	8, 9, 10.15.
		1	Solid Geometry.....	3	M., W., F.	1.30.
		2	College Algebra.....	3	M., W., F.	9, 11.15, 2.30, 3.30.
		3	Plane Trigonometry.....	2	T., T.	9, 11.15, 2.30, 3.30.
		4	Analytic Geometry I.....	2	T., T.	8, 9, 10.15, 2.30, 3.30.
		5	Calculus I.....	3	M., W., F.	8, 9, 10.15, 2.30, 3.30.
		6	Analytic Geometry II.....	2	T., T.	10.15.
		7	Calculus II.....	3	M., W., F.	10.15.
		8	Calculus III.....	2	T., T.	10.15.
		9	Spherical Trigonometry.....	2	T., T.	9.
PHYSICAL SCIENCE GROUP: Three units required in preparatory school or College.	Civil Engineering.	5	Surveying.....	5	Daily.	11.15.
		1	Elementary Chemistry.....	5	Daily.	11.15.*
	Chemistry.	3	Qualitative Analysis.....	5	Daily.	8 to 10.
		2	Elementary Physics.....	5	Daily.	9.
	Physics.	4	General Physics.....	5	Daily.	10.15.
BIOLOGICAL SCIENCE GROUP: Three units required in preparatory school or College.		1	Elementary Geology.....	5	Daily.	11.15.
	Geology.	2	Morphological Zoology.....	5	Daily.	1.30 to 3.30.
		1	Elementary Botany.....	5	Daily.	1.30 to 3.30.
		3	Cryptogamic Botany.....	3	M., W., F.	3.30 to 5.30.
	Botany.	1	Elementary Psychology.....	3	M., W., F.	9.
HISTORICAL GROUP: Two units required in preparatory school or College.	Philosophy.	2	Introduction to Philosophy.....	2	T., T.	9.
		2a	English History.....	3	M., W., F.	8, 9.
		2b	English History.....	2	T., T.	8, 9.
	European History.	4	Roman History.....	3	M., W., F.	10.15, 11.15.
		6	Medieval History II.....	3	M., W., F.	8, 9.
Economics.	American History.	2	American History II.....	3	M., W., F.	9.
		4	American Government II.....	2	T., T.	9.
		1	Elementary Economics.....	5	Daily.	3.30.
		3	Economic History United States...	3	M., W., F.	9.

NOTE.—Courses printed in italics are not open to Freshmen.

* Laboratory work, Monday and Tuesday, at 10.15 or 3.30.

TABLE OF COURSES OPEN TO FRESHMEN AND SOPHOMORES, SECOND TERM—concluded.

GROUP.	Department.	No.	Course.	Hrs.	Days.	Time.
FOREIGN LANGUAGE GROUP: Six units required in preparatory school or College.	Latin.	1	(Preparatory) Prose Comp.	3	M., W. F.	1.30.
		3	Vergil	5	Daily.	8.
		4	Cicero's De Senectute and Livy...	3	M., W., F.	11.15.
		5	Grammar and Composition.	3	T., T.	11.15.
		6	Horace's Odes	3	M., W., F.	9.
		7	Terence	2	T., T.	9.
		10	Horace (Satires and Epistles) ...	2	W., F.	10.15.
		11	Roman Private Life	1	M.	10.15.
		12	Prose Composition	2	T., T.	10.15.
	Greek.	2	Anabasis	5	Daily.	9.
		5	Homer's Odyssey	3	M., W., F.	10.15.
		6	Herodotus	2	T., T.	10.15.
		9	Euripides and Æschylus	3	M., W., F.	11.15.
		10	Demosthenes	2	T., T.	11.15.
		20	Attic Greek	2	T., T.	10.15.
		21	New Testament Greek I	3	M., W., F.	10.15.
		28	Greek Art II	1	T.	4.30.
	German.	1	Outline of Grammar	5	Daily.	1.30.
		2	German Reader	5	Daily.	8, 9, 11.15, 1.30.
		3	German Prose	5	Daily.	9.
		4	Schiller's Wallenstein	5	Daily.	8, 9, 10.15, 11.15, 3.30.
		6	Composition	2	T., T.	10.15.
		7	Schiller's Dramas	3	M., W., F.	10.15.
		8	Goethe's Faust	3	M., W., F.	11.15.
	French.	1	Elementary French I	5	Daily.	11.15.
		2	Elementary French II	5	Daily.	8, 9, 10.15, 11.15, 1.30.
		3	Modern French Prose	3	M., W., F.	8.
		4	Composition	2	T., T.	8.
		5	Prose and Poetry	3	M., W., F.	10.15.
		6	Composition	2	T., T.	10.15.
		7	Cornelle and Racine	2	T., T.	9.
		10	Advanced Composition	2	T., T.	11.15.
	Spanish.	1	Elementary Spanish	5	Daily.	2.30.
		2	Elementary Spanish II	5	Daily.	10.15, 11.15.
		5	Advanced Composition	2	T., T.	2.30.
	Music.	2	Development of Music	1	M.	2.30.

COURSES OF INSTRUCTION.

UNDERGRADUATES AND GRADUATES.

ANATOMY.

Professor SUDLER.

Doctor SMITH.

EQUIPMENT.—The department occupies the lower floor of Medical Hall, and uses the lecture room on the floor above. The dissecting-rooms are well lighted and comfortable. A reference library, models and specimens are provided. Students are furnished with a skeleton and well-preserved dissecting material, for which a fee is charged covering the actual cost of the material consumed. They are expected to furnish dissecting instruments and two gowns for use in the dissecting-room.

FOR ADVANCED UNDERGRADUATES AND GRADUATES.

1.—**DESCRIPTIVE ANATOMY.** Seven hours, 1st term, daily, 8 to 12:15. The first two weeks are occupied by a study of osteology. This is intended as an introduction to the study of anatomy. The vertebral column is considered from a morphological standpoint and the various bones studied by means of drawings and modeling. The balance of the term is devoted to dissection of the arm and leg and study of various preparations and models illustrating these parts. Professor Sudler.

2.—**DESCRIPTIVE ANATOMY.** Eight hours, 2d term, daily, 8 to 12:15. During this term the abdomen, thorax and head are carefully dissected and studied. This course is a continuation of course 1. Professor Sudler.

ASTRONOMY. (See Mathematics.)

BOTANY.

Professor STEVENS.

Professor BARBER.

Assistant Professor STERLING.

Mr. AGRELIUS, Fellow.

EQUIPMENT.—The department is provided with laboratories and essential working appliances for general morphology, plant histology, systematic botany, herbarium, plant physiology, and bacteriology. The equipment embraces microtomes, paraffin baths, etc., for histological work, simple and compound microscopes for each student, individual sets of apparatus for physiological experiments, and ap-

paratus for carrying on bacteriological research according to the best methods. In connection with the laboratory for plant physiology is a workroom supplied with tools and machinery for the construction of apparatus as needed. There is a departmental library, in which are at hand the books of reference needed by the students in connection with their laboratory work, and the general library contains the leading botanical periodicals.

ADVICE AS TO CHOICE OF COURSES.—All courses in botany must be preceded by course 1 or its equivalent in other schools. Course 1 affords an introduction to the general field of botany. Students who enter the University with less than a high-school year in botany should consult with the department about the best first course in botany following their high-school preparation. Students who have completed a high-school year in botany may not take course 1 for credit, for they are supposed to have covered the ground of this course at the high school, and are prepared to enter courses 2, 3, 5, and 11, which are elementary in their several fields. The student should take course 3 following course 1 or its high-school equivalent, if he wishes to get an intimate acquaintance with the morphology and life-histories of the different groups of plants, from the lowest to the highest; or course 2, if he wants to acquire histological technique and to understand the cellular structure of plants and how plants are equipped to perform their physiological functions, and to prepare himself for plant physiology in course 4; or course 5, if he desires, first of all, to broaden his knowledge of the morphology and systemy of the flowering plants. If, after course 1, the student wishes to elect two courses that would best enrich his general information about plants, courses 2 and 3 should be chosen. If a basis for a knowledge of sanitation is desired, courses 3 and 11, or 12 in place of 11, should be selected. Courses 1, 2, 3, 4 and 5 are fundamental to scientific plant culture. Course 13 is designed to help those students who want a knowledge of the essentials of plant culture and the principles of selecting and arranging plants in the laying out and planting of grounds. Students who are preparing to teach botany in high schools should take courses 1, 2, 3, 4, and 5.

FOR UNDERGRADUATES ONLY.

1.—ELEMENTARY GENERAL MORPHOLOGY. Five hours, 2d term, at 1:30 to 3:30. An introduction to the forms and parts of plants, and the way typical plants perform their functions and conform to their environment. This course, or its equivalent in other schools, is a prerequisite to all succeeding courses in botany. Laboratory work ten hours a week, reading, recitations, and lectures. Open

to all students of the College. Professor Stevens and Assistant Professor Sterling.

2.—PLANT HISTOLOGY. Five hours, 1st term, at 1:30 to 3:30. A study of plant tissues, with special reference to their development and functions; plant products, their origin and physiological and biological significance; histological technique. Laboratory work ten hours a week, recitations, and lectures. Open to all students of the College who have taken course 1 or its equivalent. Professor Stevens.

3.—CRYPTOGAMIC BOTANY. Three hours, 2d term, Monday, Wednesday, and Friday, at 3:30 to 5:30. The life-histories of cryptogams, and an introduction to the study of reproduction of phanerogams. Laboratory work six hours a week, reading, and lectures. Open to all students who have taken course 1 or its equivalent. Professor Barber and Assistant Professor Sterling.

FOR ADVANCED UNDERGRADUATES AND GRADUATES.

4.—EXPERIMENTAL PLANT PHYSIOLOGY. Five hours, 2d term, at 3:30 to 5:30. Laboratory work ten hours a week, reading, and conferences. Open to Juniors and Seniors who have taken course 2. Professor Stevens.

5.—SYSTEMATIC BOTANY. Phanerogams. Three hours or five hours, 1st term, Monday, Wednesday, and Friday, or Monday, Tuesday, Wednesday, Thursday, and Friday, 10:15 to 12:15. Laboratory work six hours a week, or ten hours. Open to Juniors and Seniors who have taken course 1 or its equivalent. Professor Barber.

6.—SYSTEMATIC BOTANY. Cryptogams. Two hours, 1st term, Tuesday and Thursday, at 10:15 to 12:15. Laboratory work four hours a week. Open to Juniors and Seniors who have taken course 2 or its equivalent. Professor Barber.

7.—PROBLEMS IN TAXONOMY. Three hours, five hours, or ten hours, 1st or 2d term, or both terms, by appointment. Plant relationships and classification, in which selected groups of plants are critically studied. Professor Barber.

8.—PROBLEMS IN THE MORPHOLOGY OF THALLOPHYTES, BRYOPHYTES, AND PTERIDOPHYTES. By appointment, three hours, five hours, or ten hours, 1st or 2d term, or both terms. Laboratory work and reading. Professor Barber.

9.—PROBLEMS IN THE MORPHOLOGY OF SPERMATOPHYTES. By appointment, three hours, five hours, or ten hours, 1st or 2d term, or both terms. A study of the forms of plant members under vary-

ing environment. Laboratory work, field-work, and reading. Professor Stevens.

10.—PROBLEMS IN HISTOGENESIS. By appointment, three hours, five hours, or ten hours, 1st or 2d term, or both terms. A study of the development of the tissues in selected plants. Professor Stevens.

11.—BACTERIOLOGY. Five hours, 2d term, Monday, Tuesday, Wednesday, Thursday, and Friday, at 8 to 10. Bacteriological technique. Pathogenic bacteria and other forms of economic importance. Laboratory work ten hours a week, reading, and lectures. Professor Barber.

12.—BACTERIOLOGY FOR DOMESTIC SCIENCE. Two hours, 2d term, Tuesday and Thursday, or may be taken daily for half a term, 8 to 10. To include a treatment of the more important bacteria of food and water and the prevention of the spread of infectious diseases. Professor Barber.

13.—DOMESTICATED PLANTS. Two hours, 1st term, Tuesday and Thursday, 3:30 to 4:30. The origin and amelioration of cultivated plants. Methods of propagation and culture of trees, shrubs, herbaceous perennials, and annuals. The planting of private and public grounds. Readings and lectures and demonstrations. Professor Stevens, Professor Barber, and lecturers on the various phases of the subject.

FOR GRADUATES ONLY.

14.—STRUCTURE AND DEVELOPMENT OF CRYPTOGRAMS. By appointment, five hours or ten hours, throughout the year. Bacteria or any group may be made a special study. Professor Barber.

15.—MORPHOLOGY AND PHYSIOLOGY OF THE PLANT CELL. By appointment, five hours or ten hours, 1st or 2d term, or both terms. A study of cell forms, their adaptation to specific functions, and their behavior under varying environment; nuclear and cell division; reproduction. Professor Stevens.

16.—PLANT ECOLOGY. By appointment, five hours or ten hours, throughout the year. The relation of plants to their environment. Field-work and reading. Warming's and Schimper's texts and current literature. Professor Stevens.

17.—BOTANICAL SEMINARY. One hour, by appointment. Review and discussion of current botanical work. Reports on assigned subjects. Open to graduates and advanced undergraduates.

CHEMISTRY.

Professor BAILEY.
Professor SAYRE.
Professor DUNCAN.
Associate Professor CADY.
Assistant Professor MCFARLAND.
Assistant Professor CURTIS.
Assistant Professor BUSHONG.
Assistant Professor JACKSON.
Mr. RUPERT.
Mr. PETERSON, Fellow.

EQUIPMENT.—The Chemistry Building, which was completed in 1900, affords abundant laboratory space for carrying on the work. The rooms are furnished with gas, water, vacuum for rapid filtering, distilled water, and compressed air. The balance-rooms on each floor, storerooms, and instructors' rooms conveniently located, afford every facility for scientific research. The laboratory for general chemistry accommodates 140 students working at one time, or 280 in two divisions; the qualitative laboratory has a sufficient number of desks for 72 students working at the same time, or 144 in two divisions; the quantitative laboratory accommodates 80 students, and the organic laboratory 72 students working at one time, or 144 in two divisions. The large lecture-room will seat over 300. In addition to these rooms, there are numerous smaller laboratories and classrooms that will each accommodate from ten to fifty students. Each student is assigned a desk and is loaned apparatus for his individual use. Hoods to carry off injurious gases are placed between all the windows in the large laboratories, and, with a constant pressure of air produced by a fan blower, abundant ventilation is secured. A liquid-air plant of unusual efficiency has been installed, which affords excellent facilities for making researches at extremely low temperatures. The assay laboratory, located in the basement, is provided with the usual muffle and crucible furnaces, and well stocked with ores for experimental use. A metallurgical laboratory has been recently installed, with gas-blast furnaces and other improved appliances.

For illustration and demonstration in lectures there are supplied projection lanterns, cylinders of compressed gases, apparatus for testing coal-oil, gas, alcohol; standard sets of thermometers and hydrometers, combustion furnaces, analytical balances; mineral collections; 800 specimens for illustrating organic chemistry; a collection of food products and adulterated foods; a mineral-water collection; sets of specimens for illustrating the manufacture of china, leather, zinc, glass, fats, soap, alcoholic liquors, gunpowder, fertilizers, white lead, acids, oils, cements, etc. In addition to these, the apparatus for use in physical chemistry has been recently in-

creased by the purchase of several hundred dollars' worth of electrical instruments and apparatus for thermochemistry, for the determination of molar weights, and for the measurement of the critical constants of liquids, so that the department is well equipped for work in this line.

The work of the State Water Survey and a good portion of the work for the enforcement of the Kansas food and drugs law of February 14, 1907, is carried on in special laboratories in the Chemistry Building.

ADVICE AS TO CHOICE OF COURSES.—Students desiring to become professional chemists should take the following studies: Elementary chemistry, advanced inorganic chemistry, qualitative analysis, quantitative analysis, organic chemistry, industrial chemistry, physical chemistry, metallurgy.

Those desiring to teach should select not less than twenty-five hours from the following: Elementary chemistry, advanced inorganic chemistry, qualitative analysis, sanitary and applied chemistry, chemistry and physiology of foods, organic chemistry, physical chemistry.

For the medical course, any studies in the above lists not required in the Medical School may be selected.

For mining and metallurgical work, the courses are prescribed in the Engineering School, but additional work in quantitative analysis and industrial chemistry is very desirable.

For business or general culture, as a foundation for work in any biological science, or in physics or mineralogy, at least elementary chemistry, advanced inorganic chemistry and organic or qualitative analysis should be taken.

Those who desire to take graduate work will be expected first to make up undergraduate work to the point where they can do graduate work satisfactorily.

FOR UNDERGRADUATES ONLY.

1.—**ELEMENTARY CHEMISTRY.** Five hours, daily, 2d term, 10:15 to 12:15. Laboratory work on Monday and Tuesday, at the above hours, or 3:30 to 5:30. Lectures and recitations, Wednesday, Thursday, and Friday, at 11:15. This is a study of the elements and their compounds, with the use of Remsen's Briefer Course in Chemistry or some work of the same scope. Open to all students in the College. Professor Bailey and Assistant Professor Curtis.

2.—**INORGANIC CHEMISTRY.** Five hours, daily, 1st term. Lectures and recitations, Monday, Wednesday, and Friday, 8 to 9. Laboratory, Tuesday and Thursday, either 8 to 10 or 1:30 to 3:30. Ostwald's Principles of Inorganic Chemistry, translated by Alex

ander Findlay. Open to all students of the College who have taken course 1. Associate Professor Cady and Mr. Rupert.

3.—QUALITATIVE ANALYSIS. Five hours, daily, 2d term, 8 to 10. Lectures and laboratory work. Bailey and Cady's Guide to the Study of Qualitative Analysis. Open to all students of the College who have taken course 2. Associate Professor Cady and Mr. Rupert.

4.—INDUSTRIAL CHEMISTRY. Three hours, 1st term, Monday, Wednesday, and Friday, at 9. This course includes a technical study of the manufacture of acids, alkalies, explosives, glass, pottery, porcelain, mortars, cements, paper, alcohol, vinegar, leather; also of dyeing, calico printing, and similar industries. Thorp's Outlines of Industrial Chemistry. Open to Juniors and Seniors who have taken course 1. Professor Duncan.

5.—SANITARY AND APPLIED CHEMISTRY. Two hours, 1st term, Tuesday and Thursday, 10:15 to 12:15. A practical study of the atmosphere; domestic fuels, heating, and ventilation; artificial lighting; water-supplies and methods of purification and filtration; sewage; the use of soap, disinfectants, and antiseptics. Bailey's Sanitary and Applied Chemistry, part I. Lectures, recitations, and laboratory work. Open to Juniors and Seniors who have taken the equivalent of course 1. Professor Bailey.

6.—THE CHEMISTRY AND PHYSIOLOGY OF FOODS. Three hours, 2d term, Monday, Wednesday, and Friday, 1:30 to 3:30. A study of food supply, its source, composition, liability to falsification and adulteration; preparation and methods of preservation. This course will also include a study of dietetics from a chemical standpoint, balanced rations, economy of foods, and the digestive processes. In connection with the latter topic, lectures will be given by Professor Sayre on digestive ferments. Bailey's Sanitary and Applied Chemistry, part II. Lectures, recitations, and laboratory work. Open to Juniors and Seniors who have taken the equivalent of course 1. Professor Bailey and Professor Sayre.

FOR ADVANCED UNDERGRADUATES AND GRADUATES.

7.—QUANTITATIVE ANALYSIS. Five hours, 1st term, daily, 3:30 to 5:30; or 2d term, daily, 8 to 10. Lectures and laboratory work. Must be preceded by course 3. Assistant Professor Curtis and Mr. Rupert, 1st term; Assistant Professor Curtis, 2d term.

8.—QUANTITATIVE ANALYSIS. Advanced course. Five hours, 1st term, daily, 3:30 to 5:30; or 2d term, daily, 8 to 10. Must be preceded by course 7. Either of the subjects mentioned below may be taken: (a) Chemistry of the cement industry; (b) chem-

istry of the packing-house industries; (c) iron analysis. Professor Bailey, 1st term; Assistant Professor Curtis, 2d term.

9.—GAS ANALYSIS. Two hours, 1st term, Tuesday and Thursday, by appointment. A laboratory course in the quantitative determination of common gases, analysis of gaseous mixtures, flue gases, natural gas, etc. Both exact methods of analysis and technical methods will be employed. Gill's Gas Analysis or Hempel's Gas Analysis. Must be preceded by course 7. Assistant Professor McFarland.

10.—OIL ANALYSIS. Three hours, 2d term, Monday, Wednesday and Friday, by appointment. A laboratory course in the analysis of animal, vegetable or mineral oils. Determination of the specific gravity, viscosity, and other constants. Distillation, as applied to mineral oils. Must be preceded by course 8. Professor Duncan.

11.—ELECTROLYTIC ESTIMATION OF METALS. Two hours, 2d term, by appointment. A laboratory course in the practical work of analysis by electrolysis, including the use of the rotating cathode. Must be preceded by course 7. Assistant Professor Curtis.

12.—SUGAR ANALYSIS. Two and one-half hours, by appointment, second term (b). A laboratory course. Must be preceded by course 7. Professor Bailey.

13.—WATER ANALYSIS. Three hours, 2d term, by appointment. A study of the mineral and sanitary analyses of waters. Mason's Water Analysis, and volume VII (Mineral Waters), University Geological Survey of Kansas. A laboratory course. Must be preceded by course 7. Assistant Professor Bushong.

14.—ASSAYING AND METALLURGICAL ANALYSIS. Five hours, 2d term, daily, 3:30 to 5:30, and by appointment. This is a course in the fire assay of the ores of gold, silver, and lead, followed by the volumetric analysis of the ores of copper, lead, iron, zinc, manganese, etc., and the analysis of bullion. Lectures and laboratory work. Lodge's Notes on Assaying, and Law's Technical Methods of Ore Analyses. Must be preceded by course 7 and mineralogy 1. Assistant Professor McFarland and assistant.

15.—FOOD ANALYSIS. Five hours, either term, by appointment. This is a laboratory course, designed for those who wish to make a specialty of testing the composition of food and its adulteration. It should be preceded or accompanied by a course in the use of the microscope and in bacteriology. Open to Juniors and Seniors who have taken courses 1, 2, and 3. Professor Bailey and Assistant Professor Jackson.

16.—ORGANIC CHEMISTRY I. Five hours, 1st term, daily, 3:30 to 5:30. A study of the hydrocarbons and their derivatives. Lectures, recitations, and laboratory work. Must be preceded by courses 1 and 2. Professor Duncan and assistants.

17.—ORGANIC CHEMISTRY II. A continuation of course 16. Five hours, 2d term, daily, 3:30 to 5:30. Lectures and laboratory work. Professor Duncan and assistants.

18.—ORGANIC PREPARATIONS, ADVANCED. Five hours, either term, by appointment. A continuation of the work of the previous course. Must be preceded by course 17. A special study of organic synthetical methods, as well as of ultimate organic analysis of carbon, hydrogen, nitrogen, sulfur, and the halogens. Professor Duncan.

19.—METALLURGY I. Five hours, 1st term, daily, at 11:15. General metallurgy and metallurgy of iron and steel. Properties of metals and alloys, metallurgical terms and processes, furnace types, refractory materials and slags, fuels and thermal measurements, calculation of furnace charges, etc., followed by a study of iron and its ores; methods for manufacture of pig iron and wrought iron; manufacture of steel by crucible, Bessemer and open-hearth processes, special steels and special processes; heat treatment and metallography of steel. Must be preceded by chemistry 3. Required of mechanical and chemical engineers, Senior; optional in the College and for mining engineers, Senior. Assistant Professor McFarland.

20.—METALLURGY II. Five hours, 2d term, daily, at 11:15. Metallurgy of lead, zinc, and copper, followed by metallurgy of silver, gold, mercury, and tin. Study of principal ores and methods of extraction and refining, amalgamation, chlorination and cyanide processes, pyritic smelting, etc. Must be preceded by chemistry 3. Required of mining engineers, Senior; optional in the College and for chemical engineers, Senior. Assistant Professor McFarland.

21.—METALLURGICAL LABORATORY. Three hours (two three-hour periods), either term, by appointment. This course includes (a) temperature measurements by thermoelectric, optical and fusion pyrometers, with calibration of instruments; (b) preparation of slags and alloys, with a study of the relation of composition to structure, fusibility, and other properties; (c) study of roasting, reduction and oxidation reactions used in metallurgical processes; (d) amalgamation, chlorination, cyaniding, and leaching; (e) the testing of ores to determine the proper metallurgical treatment.

Optional. Open to Juniors, Seniors and Graduates who have taken or are taking metallurgy I or II. Assistant Professor McFarland.

22.—PHYSICAL CHEMISTRY. Five hours, 1st term, daily, at 10:15. A course paying special attention to electrochemistry. Lectures and laboratory work. Must be preceded by chemistry 7, or by chemistry 3, and general physics and calculus. Associate Professor Cady.

23.—PHYSICAL CHEMISTRY. Five hours, 2d term, daily, at 10:15. A general course in theoretical and physical chemistry. Lectures and laboratory work. Must be preceded by chemistry 7 or chemistry 3, and general physics and calculus. Associate Professor Cady.

24.—ELECTROCHEMISTRY. Five hours, 2d term, daily, by appointment. The study of reactions involving oxidation and reduction, electrosynthesis and decompositions, the preparation of chemicals, the reduction of metals from their ores, and the purification of metallurgical products. A laboratory course, with lectures on the theory and practice of electrochemistry. Must be preceded by course 22. Associate Professor Cady.

25.—CHEMICAL STATICS AND DYNAMICS. Three hours, 2d term, by appointment. A study of the manner in which chemical reactions take place, and the equilibria which result, from the standpoint of reaction velocities. Must be preceded by general physics, calculus, and organic chemistry. Associate Professor Cady.

26.—THE PHASE LAW. Two hours, 2d term, by appointment. A study of chemical equilibria from the standpoint of the phase law of Gibbs. Associate Professor Cady.

27.—TEACHERS' COURSE. Five hours, either term. Designed for those who desire to teach in high schools. Professor Bailey.

FOR GRADUATES ONLY.

28.—HISTORY OF CHEMISTRY. Three hours, 2d term, by appointment. A course in history of chemistry and the development of chemical theories. Recitations, library work, and the presentation of reports. Offered in 1906-'07 and alternate years thereafter. Professor Duncan.

29.—ANALYTICAL CHEMISTRY. Five hours, either term, by appointment. A research course. This may include the investigation of some problems in metallurgical or manufacturing processes, the complete investigation of some proposed water-supply, the development of new methods in analytical chemistry, or a study and comparison of methods already in use. Professor Bailey.

30.—ORGANIC CHEMISTRY. Five hours, either term, by appointment. A research course. This course offers, to those who have proper preparation, a chance for a more extended study and original investigation. Professor Duncan.

31.—PHYSICAL CHEMISTRY. Five hours, either term, by appointment. A research course extending over two or more terms. An opportunity is offered, to those who are sufficiently advanced, to carry on investigations in this most recently developed branch of chemistry. Associate Professor Cady.

ECONOMICS. (See Sociology.)

DRAWING AND DESIGN.

Professor GRIFFITH.

EQUIPMENT.—The studios of the department of drawing, on the third floor of Snow Hall, are well equipped with a great many casts from the antique; books and plates upon the theory and history of ornament; a fine printing-press, designed for color printing, and used by the students to duplicate their designs; easels and drawing-boards. The classical museum and the museum of natural history offer an abundance of material for the use of students in design.

ADVICE AS TO CHOICE OF COURSES.—The following courses are optional. Technical students, to whom some drawing is essential, are advised to take course 1. Students wishing training in artistic perception and graphic expression, for its general culture value, must take course 1, followed by 3 and 4.

FOR ADVANCED UNDERGRADUATES.

1.—FREE-HAND DRAWING. Three hours, 1st term, Monday, Wednesday, and Friday, 1:30 to 3:30. Drawing with pencil and charcoal from the cast and objects in still life, which aims to teach the student to construct form in a simple and correct manner; drawing with pen and ink and water-colors for illustrative and reproductive processes. Professor Griffith.

2.—FREE-HAND DRAWING. Three hours, 2d term, Monday, Wednesday, and Friday, 1:30 to 3:30. A continuation of course 1. Professor Griffith.

3.—PRINCIPLES OF ART. Two hours, 1st term, Tuesday and Thursday, at 1:30. A lecture course on the theory of the technical beauties of a work of art, presenting the principles of composition and perspective, together with considerations of technical processes. The object of the course is to give the student a critical knowledge necessary to understand and more fully enjoy a work of art. Professor Griffith.

4.—ORNAMENTAL DESIGN. Two hours, 2d term, Tuesday and Thursday, 3:30 to 5:30. The anatomy of pattern and the planning of ornament. Must be preceded by course 1. Professor Griffith.

5.—ORNAMENTAL DESIGN. Two hours, 1st term, Tuesday and Thursday, 3:30 to 5:30. The application and history of ornament. Must be preceded by course 4. Professor Griffith.

EDUCATION.

Professor OLIN.

Associate Professor SCHWEGLER.

Assistant Professor MCFADDEN.*

———, Fellow.

EQUIPMENT.—The library facilities for the work of the department include about 1600 volumes listed under the title "Education," and a large number of volumes listed under other titles. Among these volumes are complete sets of the Reports of the Commissioner of Education, Horace Mann's Reports, the International Education Series, the Great Educators Series, etc. There are files of the *Pedagogical Seminary*, the *Educational Review*, the *School Review*, and other high-class educational periodicals. The department has a museum room on the third floor of the Chemistry Building, in which are found several hundred volumes of school-books, ancient and modern, pamphlets, and a limited number of samples of school furnishings and apparatus. Weekly sessions of the conference in education are held for the consideration of current literature and discussions of topics in education. These meetings are open to undergraduates, and attendance upon them is required of graduate students in education.

ADVICE AS TO CHOICE OF COURSES.—Courses 1, 2, 3 and 4 are recommended for all students in education. In addition to these, for purposes of general culture, courses 9, 10 and 11 are recommended; the other courses are more for technical study and the practical application of educational principles, and, in general, their numbers indicate the order of their advancement. Students intending to qualify for the University teacher's diploma are recommended to begin their work in education with the Junior year.

FOR UNDERGRADUATES ONLY.

1.—HISTORY OF ANCIENT AND MEDIAEVAL EDUCATION. Three hours, 1st term, Monday, Wednesday, and Friday, at 3:30. A survey of typical movements in education, the development of systems, and the work of great educators. Professor Olin.

2.—HISTORY OF MODERN EDUCATION. Three hours, 2d term,

* From February to June, 1907.

Monday, Wednesday, and Friday, at 3:30. This is a continuation of course 1, but may be taken separately. It deals with the period from the revival of learning to the present time. Professor Olin.

3.—THE PRINCIPLES OF EDUCATION. Three hours, 1st term, Monday, Wednesday, and Thursday, at 11:15. A systematic treatment of the factors of education, physical, intellectual, and social, and their relation to the teaching process. Largely based on the texts of Harris, O'Shea, and Butler. Lectures, required readings, reports, and class discussions. Open to Juniors and Seniors who have taken course 1 or 2. Associate Professor Schwegler.

5.—SCHOOL LAW AND ADMINISTRATION. Two hours, 1st term, Tuesday and Thursday, at 3:30. A study of the Kansas laws relating to the maintenance, supervision and administration of schools; comparison with school laws of other states; individual studies of special state schools of Kansas and city systems of other states. Professor Olin.

6.—SCHOOL ECONOMY. Three hours, 2d term, Monday, Wednesday, and Friday, at 2:30. Conditions and principles essential to efficient school work, school hygiene, organization and authorities of the school, financial support, courses of study, government, library management. Required reading, observation work, class discussions, and lectures. Open to Juniors and Seniors who have taken courses 1 or 2 and 3 or 4. (Not given in 1907-'08.) Professor Olin.

7.—METHODS OF INSTRUCTION. Two hours, 1st term, Tuesday and Thursday at 2:30. Rational basis of the teaching process. Examination of the cardinal Herbartian doctrines. Illustrations from typical elementary-school subjects. Observation in elementary and secondary schools. Open to Juniors and Seniors who have taken courses 1 or 2 and 3 or 4. Associate Professor Schwegler.

8.—SCHOOL SUPERVISION. Two hours, 1st term, Tuesday and Thursday, at 9. This course is largely based on the texts of Chancellor and Picard, and the reports of the Committees of Twelve and Fifteen. Reports, class discussions, and lectures. Professor Olin.

12.—THE SECONDARY SCHOOL. Three hours, 2d term, Monday, Wednesday, and Friday, at 9. A study of the development, equipment, curriculum and administration of the American high school. Professor Olin.

FOR ADVANCED UNDERGRADUATES AND GRADUATES.

4.—PHILOSOPHY OF EDUCATION. Three hours, 2d term, Monday, Wednesday, and Thursday, at 11:15. Library work, based

mainly on Rosenkranz, Compayre, and Horne. Required reading, reviews, and special studies. Associate Professor Schwegler.

9.—COMPARATIVE STUDY OF EDUCATIONAL SYSTEMS. Three hours, 1st term, Monday, Wednesday, and Friday, at 9. A study of the elements of the school systems of England, France, and Germany, and a comparison with the systems of this country. Professor Olin.

10.—EDUCATIONAL CLASSICS. Two hours, 1st term, Tuesday and Thursday, at 10:15. A critical study of the educational doctrines found in Plato's Republic, Quintilian's Institutes of Oratory, and Locke's Thoughts Concerning Education. This course should be preceded by course 1. Associate Professor Schwegler.

11.—EDUCATIONAL CLASSICS. Two hours, 2d term, Tuesday and Thursday, at 10:15. This is a continuation of course 10, but may be taken separately. It involves a critical study of the educational doctrines found in Rousseau's *Émile*, Herbart's Science of Education, and Herbert Spencer's Education. This course should be preceded by course 2. Associate Professor Schwegler.

13.—SEMINARY. Four hours, 2d term, Monday, Tuesday, Wednesday, and Thursday, hours by appointment. Individual investigation of special subjects in educational philosophy, institutions, and administration. Open to students who have done previously at least eight hours' work in the department. Associate Professor Schwegler.

FOR GRADUATES ONLY.

14.—PROBLEMS IN ORGANIZATION, MANAGEMENT AND METHOD IN EDUCATIONAL SYSTEMS. Five hours, 2d term, daily, hours by appointment. Library work, reports, discussions, and lectures. Not open to students who have taken courses 6 and 7. Professor Olin.

ENGLISH LANGUAGE AND RHETORIC.

Professor HOPKINS.
Professor DUNLAP.
Associate Professor O'LEARY.
Associate Professor WHITCOMB.
Assistant Professor RAYMOND.
Assistant Professor LYNN.*
Assistant Professor BRYANT.
Assistant Professor SISSON.*
Assistant Professor GRAY.
Assistant Professor GARDNER.
Mr. HARGER.
Mr. FLINT.

EQUIPMENT.—Apart from a number of portraits and historical maps, the equipment of this department is the University library, in which are collections of volumes and periodicals relating especially to rhetoric and composition, to English style and English literary criticism, to journalism and newspaper work in general, and to English philology. Among these are an especially fine collection of important dictionaries, and complete sets of journals, such as *Anglia* and *Englische Studien*, and of such publications as those of the Chaucer Society, the Early English Text Society, and the English and the American Dialect Societies. The number of volumes pertaining more directly to the subjects of this department and not included in the total for English literature is about 1000; and the total for all departments of English is about 5000. A large reading-room is reserved for the use of students in these departments, under the charge of a special librarian.

ADVICE AS TO CHOICE OF COURSES.—The best arrangement of studies for individual students is dependent upon the nature of the work already done and upon the occupation or profession in view. Every student should confer with an instructor upon this matter as early in his course as he possibly can, and in no case later than the beginning of his Junior year. He should take especial notice of the fact that certain elementary and fundamental courses scheduled for Freshman and Sophomore years—rhetoric 1 and 2 and English literature 1 and 2, or their equivalent—must be completed before he can be admitted to any other English courses whatever; and that English literature 3, scheduled for Sophomore year, is a prerequisite to all English courses open to Juniors, Seniors, and Graduates.

In the three principal departments of English study—English literature, English language, and English composition—every undergraduate student should distribute his attention, choosing his courses with reference to the career he is preparing to enter upon after graduation, but taking care to avoid too narrow a specializa-

* Absent on leave, 1907-'08.

tion. In whatever department his major work is done, some part of his time should be given to each of the other two. Students whose aim is general culture will ordinarily take major work in English literature, with attention to such courses in language and composition as are literary as well as linguistic. For students contemplating a journalistic or literary profession, major work in English composition is usually advisable, selected from courses 3-10, 20-27, with minor work in literature and language. Intending teachers who wish to make especially thorough preparation for their work may sometimes take major work in English language, selected from courses 11-19; such students should in all cases take at least one elementary course in language, preferably course 11; otherwise 13 or 29. With a major in language should go as minor work courses in literature and composition. In selecting major and minor work, such courses should be chosen as bear most directly upon the special need and special interest of the individual student, offer sufficient variety of subject and method, and bring the student into contact with several instructors.

For students who are candidates for a teacher's certificate in English, the conditions are somewhat more specific. Such students are required to take not less than thirty hours of English, including the ten hours of Freshman year; and it is recommended that the minimum be thirty-five hours, to include the ten hours of Freshman year and the five hours of English literature 3, so that the study of English shall be continuous through the entire undergraduate course. This required minimum is always to include, besides the courses of Freshman and Sophomore years, three hours of English language, course 11 recommended; five hours of English composition, courses to be selected on consultation with the department head; six hours of English literature, courses to be selected on consultation with the department head. These courses and others included in the recommended total are to be determined according to the candidate's need, taste, and previous study; and if English is the candidate's principal subject, he should endeavor to increase the total number of English courses without neglecting other essential subjects, and should, if possible, add to his undergraduate work in English one year of graduate study. It is especially important that undergraduate candidates for an English teacher's certificate should secure broad acquaintance with their field by electing courses differing widely in character and given by various instructors, differing in methods and points of view. In English literature this means that the time should be divided between general historical courses, intensive courses in particular periods and authors, and courses devoted to the study of particular

literary types or species. If to this broad undergraduate foundation one year of specialized graduate study can be added, the candidate will be well equipped for his work.

In the following list, courses 1-10, 20-27, and 30 belong to the rhetorical group; courses 11-19, 29, and 31, to the linguistic. Of these courses, 1, 2, 5, 6, 7 and 8 are fundamental, as explained below; courses 3, 4, 9 and 10 (see, also, course 12 in English literature) are intended especially for journalists, and are required in the general course in journalism outlined in this catalogue. Courses 20-27 are for those interested in advanced English composition and in literary work; courses 28-31 are special courses for teachers; and courses 11-19 for advanced students, whether interested in teaching, language, or literature. The proper relation and succession of these courses are shown in the descriptions following. Courses which are continuations of preceding courses cannot be taken by students who have not had the preceding course or its equivalent, unless it is so stated.

FOR UNDERGRADUATES ONLY.

1.—RHETORIC AND ENGLISH COMPOSITION. Two hours, 1st term, Tuesday and Thursday, at 8, 9, 10:15, 11:15, 3:30, and 4:30. Written and oral themes and exercises, with outlines of rhetorical theory. Required of all Freshmen in the College. Assistant Professors Bryant, Gray, Gardner, and instructors.

2.—RHETORIC AND ENGLISH COMPOSITION. Three hours, 2d term, Monday, Wednesday, and Friday, at 8, 9, 10:15, 11:15, 2:30, and 3:30. A continuation of course 1. Required of all Freshmen in the College. Assistant Professors Bryant, Gray, Gardner, and instructors.

3.—NEWSPAPER REPORTING. Two hours, 1st term, Tuesday and Thursday, at 10:15. Lectures by instructors and others, with regular daily practice in reporting for local and other newspapers. Open to students in the second or Sophomore year of the general course in journalism. Must be preceded by courses 1 and 2 in rhetoric and courses 1 and 2 in English literature. Students who enroll in this course should reserve the 10:15 hour on Monday, Wednesday, and Friday, for working up assignments and preparing copy. The course is a prerequisite for courses 9 and 10. Mr. Harger and Mr. Flint.

4.—NEWSPAPER REPORTING. Three hours, 2d term, Monday, Wednesday, and Friday, at 10:15, preferably with the same hour reserved on Tuesday and Thursday for duties and assignments. A continuation of course 3, under the same general conditions and requirements. Mr. Harger and Mr. Flint.

5.—NARRATION AND DESCRIPTION. Three hours, 1st term, Monday, Wednesday, and Friday, at 8. A study of general principles, with exercises. A fundamental course, leading to 9 and 10, or to the group 20-27, inclusive. Associate Professor O'Leary and Assistant Professor Gardner.

6.—NARRATION AND DESCRIPTION. Two hours, 2d term, Tuesday and Thursday, at 8. A continuation of course 5. Associate Professor O'Leary and Assistant Professor Gardner.

7.—EXPOSITION AND ARGUMENT. Two hours, 1st term, Tuesday and Thursday, at 8. A study of general principles, with exercises and briefs. A fundamental course, leading to 9 and 10, to 20-27, inclusive, or to courses in public speaking and debate. Professor Hopkins.

8.—EXPOSITION AND ARGUMENT. Three hours, 2d term, Monday, Wednesday, and Friday, at 8. A continuation of course 7, but open also to students who have not had course 7. Professor Hopkins.

9.—EDITING AND EDITORIAL WRITING. Three hours, 1st term, Monday, Wednesday, and Friday, at 10:15, preferably with the same hour reserved on Tuesday and Thursday for assignments and office duty. A survey of all departments of newspaper work, with practice in reporting and editing, in editorial and feature writing, and in proof-reading, in connection with local and other newspapers. One or more of the subjects named may be chosen for special attention. Must be preceded by courses 3 and 4, by either of 5 and 6, 5 and 8, or 7 and 8, and by one or more courses in English literature in addition to 1, 2, and 3. Mr. Harger and Mr. Flint.

10.—EDITING AND EDITORIAL WRITING. Two hours, second term, Tuesday and Thursday, at 10:15, preferably with the same hour reserved on Monday, Wednesday, and Friday. A continuation of course 9, with assignment to newspaper duty and the special study of some department of newspaper making, with thesis. Discussion of the newspaper as a whole, with exercises in its various departments as preparation for actual work. Preparation of manuscripts, practical drill in editing "copy," study of newspaper terms. Conference course. Mr. Harger and Mr. Flint.

FOR ADVANCED UNDERGRADUATES AND GRADUATES.

11.—ELEMENTARY OLD ENGLISH (Anglo-Saxon). Three hours, 1st term, Monday, Wednesday, and Friday, at 10:15. Introductory course in Old English grammar, with reading of West Saxon texts, chiefly prose. Should be preceded by courses 1 and 2 in German or their equivalent. Required for admission to all advanced courses in English language, except as otherwise specified. Professor Hopkins.

12.—**BÉOWULF.** Three hours, 2d term, Monday, Wednesday, and Friday, at 10:15. Must be preceded by course 11. Professor Hopkins.

13.—**HISTORY OF THE ENGLISH LANGUAGE.** Three hours, 1st term, Monday, Wednesday, and Friday, at 9. Elements of English philology, including sources and development of the language, its pronunciation, inflections, and syntax. May with advantage be preceded by course 11. Assistant Professor Bryant.

14.—**GENERAL INTRODUCTION TO PHONETICS.** Two hours, 1st term, Tuesday and Thursday, at 9. Open to advanced students of any language. Assistant Professor Bryant.

15.—**TRANSITION ENGLISH.** Two hours, 1st term, Tuesday and Thursday, at 9. Language and literature of the fifteenth century; study of selected texts, with required thesis. Open to students who have not had elementary Old English. Professor Hopkins.

16.—**MIDDLE ENGLISH.** Two hours, 2d term, Tuesday and Thursday, at 9. Language and literature of the fourteenth century, exclusive of Chaucer. Open to students who have not had Old English. Professor Dunlap.

17.—**THE POEMS OF CÆDMON.** One hour, 1st term, Thursday, at 10:15. Must be preceded by course 11. Professor Dunlap.

18.—**THE POEMS OF CÆDMON.** One hour, 2d term, Thursday, at 10:15. A continuation of course 17. Professor Dunlap.

19.—**CYNEWULF'S CHRIST.**—One hour, 2d term, by appointment. Reading of text and discussion of problems. Open to students who have had elementary Old English. Assistant Professor Bryant.

20.—**LITERARY CRITICISM.** Two hours, 1st term, Tuesday and Thursday, at 10:15. Study of the principles and methods of criticism through its literature, with practice in book reviewing and in critical writing. Professor Hopkins.

21.—**LITERARY CRITICISM.** Two hours, 2d term, Tuesday and Thursday, at 9. A continuation of course 20, with special attention to the history of criticism in England and America. Library and conference course, with required thesis. Associate Professor Whitcomb.

22.—**THE DEVELOPMENT OF ENGLISH PROSE.** Two hours, 1st term. A study of the development of prose style from the beginning of the sixteenth century to the end of the eighteenth. Lecture and conference course, with required reading, reports, and thesis. (Not given in 1907-'08.) Assistant Professor Sisson.

23.—**VERSIFICATION.** One hour, 1st term, Wednesday, at 11:15.

Study of the forms and principles of English verse. Professor Hopkins.

24.—VERSIFICATION. One hour, 2d term, Wednesday, at 11:15. The history of English verse and verse forms. A continuation of course 23. Professor Hopkins.

25.—THESIS WRITING. One hour, 2d term. Practice in gathering and handling material, investigating, and testing. (Not given in 1907-'08.) Assistant Professor Sisson.

26.—ESSAY WRITING. Two hours, 2d term, Tuesday and Thursday, at 3:30. A study of general principles, with exercises. Associate Professor O'Leary.

27.—PROSE INVENTION. Two hours, 2d term, Tuesday and Thursday, at 11:15. General survey of theories of literary art, with practice in original production. Library and conference course, with required thesis. Professor Hopkins.

28.—METHODS OF TEACHING ENGLISH. Three hours, 2d term, Monday, Wednesday, and Friday, at 1:30. Principles of teaching English composition, English literature, and English language. Lectures, library reading, illustrative and review work. Must be preceded by 5 and 6, 5 and 7, 5 and 8, or 7 and 8, and by at least one three-hour course in English literature in addition to 1, 2, and 3. Additional credit up to five hours may be allowed when practice teaching can be arranged for. Associate Professor O'Leary.

29.—OLD AND MIDDLE ENGLISH GRAMMAR. Two hours, 2d term, Tuesday and Thursday, at 1:30. An elementary course, designed to accompany 28, for intending teachers who have not been able to take courses 11 or 13. Offers a rapid-reading survey of the earlier forms of the English language, as illustrated in a few representative texts. Especial attention is given to the relations between early and modern grammatical forms. Associate Professor O'Leary.

30.—HISTORY OF THE LITERATURE AND THE TEACHING OF RHETORIC IN ENGLISH. One hour, 2d term, Friday, at 3:30. Lectures, library reading, and the preparation of a thesis. Associate Professor O'Leary.

31.—MODERN ENGLISH GRAMMAR, for teachers. Two hours, 2d term, Tuesday and Thursday. (Not given in 1907-'08.) Professor Dunlap.

ENGLISH LITERATURE.

Professor DUNLAP.
 Professor HOPKINS.
 Associate Professor WHITCOMB.
 Associate Professor O'LEARY.
 Assistant Professor RAYMOND.
 Assistant Professor LYNN.*
 Assistant Professor BRYANT.
 Assistant Professor GRAY.
 Miss JONES, Fellow.

EQUIPMENT.—The department of English literature is well supplied with maps and with a large number of portraits. The library has 4000 volumes upon English literature. There are 624 volumes in the Shakspeare alcove. The department also possesses the Chaucer Society publications, the Spenser Society, the Shakspeare Society, the New Shakspeare Society, the Shakspeare Jahrbuch, *facsimiles* of the quartos, *facsimiles* of the first folio, the Shelley Society, and the Browning Society. The seminary room is large and commodious, and is well adapted for study and investigation.

ADVICE AS TO CHOICE OF COURSES.—The courses in English literature are designed to meet the needs of various classes of students. There are courses for the general student, for the student of literary history, for the student of journalism, for the student who intends to do graduate work in English literature, and for the student who intends to teach English literature. The instructors invite conference with students, and will assist in planning work to meet special cases. For further notes, see under "English Language."

FOR UNDERGRADUATES ONLY.

1.—**ENGLISH LITERATURE.** Three hours, 1st term, Monday, Wednesday, and Friday, at 8, 9, 10:15, 11:15, 3:30, and 4:30. General history, supplemented with class study of representative authors and with required library reading. Text-books, Simond's English Literature and Manly's English Poetry (1170-1892). Open to all students of the College. Associate Professor O'Leary and Assistant Professors Raymond, Bryant, and Gray.

2.—**ENGLISH LITERATURE.** Two hours, 2d term, Tuesday and Thursday, at 8, 9, 10:15, 11:15, 2:30, and 3:30. A continuation of course 1. Associate Professor Whitcomb and Assistant Professors Raymond, Bryant, and Gray.

3.—**ENGLISH LITERATURE OF THE EIGHTEENTH CENTURY.** Five hours, given both terms: 1st term, daily, at 11:15; 2d term, daily, at 8, 11:15, and 2:30. A study of the period 1660-1780.

*Absent on leave, 1907-'08.

Gosse's History of Eighteenth Century Literature will be used as a text-book, supplemented by lectures, by use of Manly's English Poetry (1170-1892) in the classroom, and by considerable library reading. The preparation of a thesis is required, with reports on collateral library work. Open to all students of the College who have had courses 1 and 2 in English literature and courses 1 and 2 in English language. Associate Professor Whitcomb and Assistant Professors Bryant and Gray.

FOR ADVANCED UNDERGRADUATES AND GRADUATES.

4.—AMERICAN LITERATURE. Three hours, 1st term, Monday, Wednesday, and Friday, at 9. General history, with especial reference to the work of the chief American poets. Lecture and library course, with class study of representative selections. Professor Hopkins.

5.—AMERICAN LITERATURE. Three hours, 2d term, Monday, Wednesday, and Friday, at 9. Study of later writers and of current literature, with especial reference to fiction. Lecture and conference course, with required readings and reports. Professor Hopkins.

6.—CHAUCER. Three hours, 1st term, Monday, Wednesday, and Friday, at 9. Lectures upon Middle English grammar and upon the life and times of Chaucer. Neither Old nor Middle English required for entrance. Careful reading of the Prologue, Knightes Tale, and the Nonne Preestes Tale. Rapid reading of a large part of the Canterbury Tales. Preparation of two theses. Professor Dunlap.

7.—ENGLISH LITERATURE OF THE ELIZABETHAN PERIOD, with special reference to Spenser. Two hours, 1st term, Tuesday and Thursday, at 9. Preparation of two theses. Professor Dunlap.

8.—SHAKSPERE. Three hours, 1st term, Monday, Wednesday, and Friday, at 10:15. Lectures upon the life and times of Shakspeare. Study and interpretation of three plays, with special attention to literary form, plot construction, character study, and Elizabethan grammar. Two hours of library work required daily and preparation of two theses. Professor Dunlap.

9.—SHAKSPERE. Three hours, 2d term, Monday, Wednesday, and Friday, at 10:15. Lectures upon the life and times of Shakspeare. Study and interpretation of three plays, with special attention to literary form, plot construction, character study, and Elizabethan grammar. Two hours of library work required daily and preparation of two theses. Professor Dunlap.

10.—ENGLISH LITERATURE OF THE SEVENTEENTH CENTURY, the

age of Milton and Jeremy Taylor. Two hours, 1st term, Tuesday and Thursday, at 1:30. Study of the growth of thought and the development of various types of English literature. Two theses. Assistant Professor Raymond.

11.—ENGLISH LITERATURE OF THE SEVENTEENTH CENTURY. Two hours, 2d term, Tuesday and Thursday, at 2:30. Continuation of course 10. Assistant Professor Raymond.

12.—HISTORY OF PERIODICAL LITERATURE. Two hours, 2d term, Tuesday and Thursday, at 1:30. A study of journalism as representing popular opinion in the development of literary ideas. Study of individual writers as influenced by popular criticism, and lectures on the history of journalistic opinion. Assistant Professor Raymond.

13.—ENGLISH PROSE OF THE EIGHTEENTH CENTURY. Three hours, 2d term, Monday, Wednesday, and Friday, at 2:30. The authors studied will be Swift, Addison, Johnson, Goldsmith, and Burke. Lectures, library work, and the preparation of theses. Associate Professor O'Leary.

14.—THE ENGLISH ESSAY. Two hours, 2d term, Tuesday and Thursday, at 2:30. A study, historical and critical, of the essay as a literary form, from Bacon to the present time. Lectures, theses, and library work. Associate Professor O'Leary.

15.—ENGLISH LITERATURE OF THE NINETEENTH CENTURY. Three hours, 1st term, Monday, Wednesday, and Friday, at 11:15. Prose, exclusive of the novel. Biographical and critical lectures. The essay. Criticism. History. The authors studied are Lamb, Hazlitt, De Quincey, Landor, Newman, Arnold, Carlyle, Macaulay, Ruskin, Pater, and Stevenson. Two hours of library work daily and preparation of two theses. Professor Dunlap.

16.—ENGLISH LITERATURE OF THE NINETEENTH CENTURY. Three hours, 2d term, Monday, Wednesday, and Friday, at 9. Poetry. Biographical and critical lectures. The authors studied are Wordsworth, Coleridge, Southey, Byron, Arnold, Tennyson, and Browning. Two hours of library work daily and preparation of two theses. Professor Dunlap.

17.—VICTORIAN LITERATURE, exclusive of the novel and Tennyson and Browning. Two hours, 1st term, Tuesday and Thursday, at 11:15. Professor Dunlap.

18.—THE MODERN ENGLISH LYRIC. Two or three hours, 1st term, Tuesday and Thursday, at 2:30 (and a third hour). A review of the main tendencies in English lyrical poetry from Skelton to Swinburne, with more intensive study of some selected period or

school. Considerable attention will be given to the general technic and theory of the lyric. Associate Professor Whitcomb.

19.—THE ENGLISH NOVEL. Three hours, 2d term, Monday, Wednesday, and Friday, at 11:15. An historical and critical survey of the English novel, from Defoe to Meredith. Lectures on the growth and development of the novel. Study of selected typical novels, illustrative of important phases of fiction. Two hours of library work daily and preparation of two theses. Professor Dunlap.

20.—BROWNING. Three hours, 1st term, Monday, Wednesday, and Friday. Lectures upon the life and literary period of Browning, with general view of more important works. Interpretative study of shorter poems and two or three of the plays. Two theses required. Assistant Professor Lynn. (Not given in 1907-'08.)

21.—TENNYSON. Two hours, 1st term, Tuesday and Thursday. General view of Tennyson and his relation to his period. Detailed study of representative works. One thesis required. Assistant Professor Lynn. (Not given in 1907-'08.)

22.—SHELLEY. Two hours, 2d term, Tuesday and Thursday, at 11:15. Lectures, and interpretation of selected poems of Shelley. Professor Dunlap.

23.—EPIC POETRY. Three hours, 1st term, Monday, Wednesday, and Friday, at 3:30. General view of the nature and history of epic poetry, with a comparative study of representative poems. Associate Professor Whitcomb.

24.—THE ENGLISH DRAMA, exclusive of Shakspeare. Two or three hours, 1st term, Tuesday and Thursday, at 3:30 (and a third hour). General history of the English drama from the liturgical plays to the present time. More detailed study of a selected period. Associate Professor Whitcomb.

25.—ENGLISH LITERATURE AS INFLUENCED BY OTHER LITERATURES. Three hours, 2d term, Monday, Wednesday, and Friday, at 3:30. A general survey of the subject, including the history of translation into English, with more detailed study of some special period or type of literature. Associate Professor Whitcomb.

ENGINEERING—CIVIL.

Professor MARVIN.
Associate Professor HOAD.
Associate Professor H. A. RICE.
Associate Professor DALTON.
Assistant Professor HUBBARD.
Assistant Professor NEWTON.

For equipment, see under School of Engineering.

Courses 8 to 15, inclusive, are open to Juniors and Seniors in the College. Courses 11 to 15, inclusive, are open to candidates for the master's degree, when accompanied by such extra work as may be required by the instructor. Courses 16 to 20, inclusive, are open only to candidates for the master's degree.

FOR UNDERGRADUATES.

5.—SURVEYING. Five hours, 2d term, daily, at 10:15. Engineer's instruments, their construction and adjustment. Methods of making and platting land, topographic, mining and hydrographic surveys. Sources of error and the means of controlling the precision of field-work. Leveling and earthwork. Freshman and Sophomore optional. Open to students of the College who have had plane trigonometry. Associate Professor Dalton and Assistant Professor Hubbard.

8.—MASONRY. Daily, 2d half of 1st term, at 8. Two and one-half credit hours. Character of materials composing masonry. Methods of cutting and dressing stone. Foundations: Cribwork, coffer-dams, caissons, piles and pile-driving, concrete, pneumatic processes, etc. Masonry structures: Culverts, arches, piers, abutments, bridges, etc.; their form, construction, strength, and cost. Compound arches of concrete and metal. Recitations and lectures. Prerequisite, mechanics 1 and 2. Assistant Professor Hubbard.

9.—ROADS AND PAVEMENTS. Two hours, 2d term, Tuesday and Thursday, at 9. A study of the materials for and methods used in the construction and improvement of country roads and city pavements. Earthwork, drainage, the road foundation, the wearing surface, etc. Principles governing the location of roads. The economic importance of the "good roads movement." Associate Professor Dalton.

10.—RAILWAY LOCATION. Three hours, 2d term, Monday, Wednesday, and Friday, at 9. The principles involved in an economic location and construction of railways. Analysis of traffic and operating expenses. The influence of proposed changes in location upon the amount of total revenue from traffic, the bonded debt and the corresponding fixed charges for interest, the operating expense,

and the dividend-paying capacity of the road. Methods of conducting field-work for preliminary and location surveys. Prerequisite, course 11. Associate Professor Dalton.

11.—RAILWAY SURVEYING. Five hours, 1st term, daily, at 10:15. A study of the methods of laying out and constructing railways. The setting out of simple and compound curves and calculation of excavation and embankment. Yards, turnouts, and switches. Easement curves of various types. Calculation of waterways, and methods of staking out foundations for culverts and bridges. This course must be preceded by a general course in surveying. Field-practice one-half day per week. Associate Professor Dalton.

12.—SANITARY ENGINEERING. Daily, 1st half of 1st term, at 11:15. Two and one-half credit hours. The collection, removal and disposal of sewage by various methods. Water-carriage and pneumatic systems. Separate and combined systems. The construction of sewers, outfalls, manholes, and flushing appliances. Ventilation of sewers. Treatment of sewage. The collection and disposal of garbage and other refuse. Garbage destruction and utilization. Street-cleaning. Associate Professor Hoad.

13.—SANITARY ENGINEERING. Daily, 2d half of 1st term, at 11:15. Two and one-half credit hours. Water-supply. The requisites of a supply as to quality and quantity. The value of chemical and biological analyses and the interpretation of results. Relation of water-supply to the public health. Rainfall and the gathering and storage of surface-water. The collection of ground-water. The use of rivers and lakes as sources of supply. Distributing systems; conduits and pipe-lines, pumping machinery, the flow of water in open channels and closed conduits. The construction of dams and reservoirs. The purification of water. Methods of maintaining the efficiency of existing plants. Associate Professor Hoad.

14.—ROOFS AND BRIDGES. 1st term, five hours, daily, 1:30 to 3:30. Analytical and graphical calculation of stresses in framed structures under various forms of loading. This course must be preceded by courses 1 and 2 in mechanics. Associate Professor H. A. Rice.

15.—BRIDGE DESIGNING. Five hours, 2d term, daily, 1:30 to 3:30. A study of bridge details and the dimensions of parts. Students work out designs for a plate girder and a simple truss. Must be preceded by course 14. Associate Professor H. A. Rice.

FOR GRADUATES ONLY.

16.—STRUCTURAL DESIGNING. Five credit hours, 1st or 2d term, daily. An advanced course covering cantilever, swing and suspen-

sion bridges, skeleton frames for buildings, train-shed roofs, stand-pipes, and elevated tanks. This course is designed to follow course 15. Lectures, recitations, and detail designing in the drawing-room. Associate Professor H. A. Rice.

17.—ENGINEERING MATERIALS. Five hours, 1st term, daily. An advanced course, which must be preceded by course 2 in mechanics. It covers the methods of manufacture of structural materials and the different means and machines used in testing their qualities. The materials considered are cast iron, wrought iron, steel, brick, stone, cements, concrete, and timber. Opportunity will be given for specialization along some particular line, if desired, and considerable experimental work may be done in the testing laboratory. Recitations, lectures, library and laboratory work. Professor Marvin.

18.—SANITARY ENGINEERING. Five hours, 2d term, daily. An advanced course, to follow courses 12 and 13. The public health. Contagious diseases and methods for destroying them. Bacteriological methods as applied to sanitary work. Influence of sanitary works on public health. Advanced work on sewerage and water-supply. Lectures, recitations, and reading. Associate Professor Hoad.

19.—GEODESY. Five hours, 2d term, daily. Method of making geodetic surveys. Station signals and their location. The measurement of angles and laying out of base lines. Determination of latitude, longitude, time, and azimuth. Instrumental constants and sources of error. Leveling by vertical angles. Precise leveling. Figure of the earth. A knowledge of surveying and calculus is necessary for this course. Professor Marvin.

20.—RESEARCH COURSE. A course of investigation of some matter directly related to civil engineering. This course should run through the year, making a ten hours' credit. Arrangements for the course should be made with Professor Marvin.

ENGINEERING—MECHANICS.

Associate Professor H. A. RICE.
Assistant Professor HOOD.
Assistant Professor HUBBARD.
Assistant Professor CORP.

For equipment, see under School of Engineering.

Courses 1 to 5 are open to Juniors and Seniors. When accompanied by such extra work as may be required by the instructor, they are also open to candidates for the master's degree.

1.—MECHANICS. Five hours, 1st term, daily, at 8 or 9. A study

of the laws of statics and dynamics. Action of forces upon bodies and the resulting motions. Prerequisite, calculus. Associate Professor H. A. Rice, and Assistant Professor Hubbard.

2.—STRENGTH OF MATERIALS. Five hours, 2d term, daily, at 8 or 10:15. The theory of resistance to stress and applications to engineering construction. To be preceded by course 1. Associate Professor H. A. Rice.

3.—TESTING OF MATERIALS. Four hours, 2d term, Monday, Tuesday, Thursday, Friday or Saturday. A laboratory course to accompany course 2. The testing of iron, steel, wood and other materials of construction for resistance to tension, compression, torsion, bending, and shearing. Experimental determination of the limits of safe loading. The testing of paving brick. Assistant Professor Hood and Assistant Professor Corp.

4.—HYDRAULICS. Daily, 1st half of 1st term, at 10:15. Two and one-half credit hours. A study of the laws governing the pressure and flow of liquids and gases and the force of and resistance to their motion. Assistant Professor Hubbard.

5.—HYDRAULIC LABORATORY. Two hours, 1st term, Monday, Wednesday, or Friday, 3:30 to 5:30. A course to accompany course 4 and the course in hydraulic machinery. Experimental work with the flow of water over weirs, through orifices and pipes, and in testing hydraulic machinery. Assistant Professor Corp.

ENGINEERING—ELECTRICAL.

Professor HILL.

Associate Professor M. E. RICE.

For equipment, see under School of Engineering.

Courses 1, 2 and 3 are open to Juniors and Seniors who have had the necessary preparation.

FOR UNDERGRADUATES ONLY.

1.—THEORY OF ELECTRICITY AND MAGNETISM. Five hours, 1st term, daily, at 10:15. A mathematical treatment of the general principles involved in the direct-current devices and introductory to their application in direct-current machinery. Junior. Professor Hill.

2.—THEORY OF ALTERNATING CURRENTS. Five hours, 2d term, daily, at 9. A mathematical treatment of the general principles involved in alternate-current phenomena and introductory to their application in polyphasal machinery. Junior. Professor Hill.

14.—DYNAMO MACHINERY. Five hours, 1st term, daily, at 10:15.

A briefer course than 3 and 4 (School of Engineering), covering both direct- and alternating-current machines. Must be preceded by physics 7 and 8 and calculus. Junior. Associate Professor M. E. Rice.

ENGINEERING—MECHANICAL.

Professor WALKER.
Assistant Professor CORP.
Assistant Professor ———.

For equipment, see under School of Engineering.

Courses 10 and 11 are open to Juniors and Seniors in the College. Courses 2 to 13, inclusive, are open to candidates for the master's degree when accompanied by such extra work as may be required by the instructor. Courses 2, 7, 9, 10 and 11 are recommended as giving the mathematical treatment of the various branches of general mechanical engineering. Courses 18 to 20 are open only to graduates who have taken the equivalent of the regular undergraduate courses in either mechanical or electrical engineering.

FOR ADVANCED UNDERGRADUATES AND GRADUATES.

2.—MECHANICS OF MACHINERY. Three hours, 2d term, Monday, Wednesday, and Friday, at 9. (a) First three weeks, a study of forces involved in the operation of machine tools, hoisting machinery, and cranes. Lectures and recitations. (b) Mechanics of the steam-engine; engine mechanism; valve motion; valve designing; analysis of forces due to steam pressure; crank-effort diagrams and fly-wheel design. Text, Halsey's Valve Gears and Dalby's Balancing of Engines. Must be preceded by mechanics 1. Professor Walker.

3.—KINEMATICS. Three hours, 2d term, Tuesday, Thursday, and Saturday, 8 to 10. A study of the motion of machine parts and of methods of transmitting motion by gears, belts, cams, etc. A drawing-room course. Text, Barr's Kinematics of Machinery. Assistant Professor ———.

4.—MACHINE DESIGN. Three hours, 1st term, 2:30 to 5:30, Monday and Wednesday. Designing and drawing of simple machine parts, followed by the complete design of some metal-working machine. Lectures and drawing exercises. Text, Kent's Mechanical Engineer's Handbook. Must be preceded by mechanics 1 and 2. Professor Walker.

5.—MACHINE DESIGN. Four hours, 2d term, Monday and Thursday, 1:30 to 5:30. Options in work allowed, as follows: (1) Same as course 4. (2) Continuation of course 4 with more complex machinery. (3) Engine designing, either steam or gas. For third

option the course must be preceded by 2, 4, and 11, and preceded or accompanied by 9 or 12. Professor Walker.

7.—ENGINES AND BOILERS.—Five hours, 2d term, at 11:15. A classroom course designed for those who do not plan to go further into the subject. It includes an elementary course in thermodynamics and a study of modern types of steam power generators. Text, Kinnealy's Engines and Boilers. Must be preceded by physics 1, 2, 3, 4, or physics 7, and by mathematics 5. Assistant Professor Corp.

8.—GENERAL MACHINE DESIGN. Three hours, 1st term, Monday, Wednesday, and Friday, at 9. Text-book work in methods of designing and proportioning machine parts for strength and durability; designing of power-transmission systems; calculations for strength of cylinders and efficiency of riveted joints. Text, Jones's Machine Design. Must be preceded by mechanics 1. Assistant Professor Corp.

9.—THE GAS-ENGINE. Two hours, 1st term, Tuesday and Thursday, at 9. Power, efficiency and economy of the gas-engine; study of the forces produced by the gas pressure and inertia; structural design. Text, Lucke's Gas Engine Design. Must be preceded by mechanics 1 and 2, and by either 7 or 11. Professor Walker.

10.—HYDRAULIC MACHINERY. Four hours, 1st term (b), at 10:15. A study of types of pumping machinery, with special reference to city water-supply, sewerage, and irrigation plants. The questions of first cost and maintenance of plant and economy in operation are fully discussed. Also a study of water-power development and methods of designing turbine water-wheels. Lectures, assigned reading, and reports. Must be preceded by mechanics 4. Professor Walker.

11.—THERMODYNAMICS. Four hours, 1st term, at 11:15. A thorough study of the laws of gases and vapors, and of the methods of converting heat into mechanical energy. The temperature-entropy method of analysis is followed, and applications made to ideal steam- and gas-engines. Text, Reeves's Thermodynamics. Must be preceded by physics 1, 2, 3, 4, or physics 7, by mathematics 5 and 7, and mechanics 1. Professor Walker.

12.—ADVANCED STEAM ENGINEERING. Four hours, 2d term, Tuesday and Thursday, at 8 to 10. Study of heat losses in the steam-engine, with methods of reducing same; compounding; superheating; jacketing; designing of reciprocating engines; principles of operation and design of air-compressors and refrigerating ma-

chinery; the steam jet; form of nozzle for adiabatic jet; and design of the steam-turbine. Recitations and lectures. Texts, Thomas's Steam Turbine, Reeves's Thermodynamics, and Kent's Mechanical Engineer's Handbook. Must be preceded by 11. Professor Walker.

13.—ENGINEERING PRACTICE. Four hours, 2d term (a), at 11:15. Power-house equipment and design. Power development by water, steam and gas considered in relation to cost and adaptability. Application of power to machinery by mechanical and by electrical methods of transmission compared with reference to cost and economy. Influence of modern methods on cost of manufacturing. Lectures. Must be preceded by either 7 or 11. Professor Walker.

OPEN TO GRADUATES IN MECHANICAL AND ELECTRICAL ENGINEERING.

18.—ADVANCED LABORATORY. Two and one-half or five hours, both terms, as assigned. Research work on special subjects. Professor Walker.

19.—ADVANCED DESIGNING. Two to four hours, both terms. Preparation of complete plans for some special machine or plant for power development or manufacturing. Professor Walker.

20.—LIBRARY WORK. Two hours, both terms. Assigned reading and reports; indexing engineering literature; preparation of bibliography. Professor Walker.

ENTOMOLOGY.

Professor HUNTER.

EQUIPMENT.—The two laboratories are arranged so that one is devoted to the introductory courses and the other to the research courses. The former is equipped with both compound and dissecting microscopes, and such accessory apparatus as is required by the students. The latter contains, in addition to the equipment of microscopes, special apparatus such as meets the individual requirements of students doing advanced work. In addition to the collection of books here shelved, there are important foreign and English periodicals, as well as monographs and other separata. The extensive collections, both biologic and systematic, offer unusual facilities for comprehensive instruction in the various groups. A more extended notice of these collections will be found under the head of "Museums." (See index.) A large series of cabinets has been especially arranged to aid in teaching. These are supplemented by models illustrating developmental processes. The material for study and apparatus at hand afford exceptional opportunities for research work.

ADVICE AS TO CHOICE OF COURSES.—The following courses are designed to meet the needs of two classes of students, viz.:

(1) Those who in general education desire some knowledge of the subject-matter and general principles of animal biology, as illustrated by this division of the animal kingdom. For this class, courses 1 to 4, inclusive, are adapted.

(2) Those preparing to become teachers and investigators engaged in research work. After completing the fundamental courses, 1 to 4, inclusive, the aims of each student will largely determine the selection of advanced courses. The requirements for those expecting to teach entomology in secondary schools are courses 1 to 4, inclusive, and course 7.

FOR ADVANCED UNDERGRADUATES AND GRADUATES.

1.—INTRODUCTORY ENTOMOLOGY. Three hours, 1st term, Monday, Wednesday, and Friday, 1:30 to 3:30. This course includes a general survey of the morphology, distribution, classification and behavior of the orders of insects. The work in the laboratory consists (1) of an anatomical study of one or more types, followed by a comparison of each type studied with closely allied forms.

(2) Exercises in classification of orders and families. A series of lectures accompany the laboratory work. Open to Seniors and Juniors of the College who have had zoölogy 1. Professor Hunter.

2.—INTRODUCTORY ENTOMOLOGY. A continuation of course 1. 2d term, Monday, Wednesday, and Friday, 1:30 to 3:30. Professor Hunter.

3.—SYSTEMATIC ENTOMOLOGY I. Two hours, 1st term, Tuesday and Thursday, 1:30 to 3:30. This course gives special prominence to the systematic position of the orders studied. The laboratory work consists of (a) determination of species; (b) careful morphological study of organs with special reference to their evolution; (c) when possible, an extended study of the species of one or more families. In addition to the text, monographs and current literature of special groups will be used. Open to Juniors and Seniors of the College who have had zoölogy 1. Professor Hunter.

4.—SYSTEMATIC ENTOMOLOGY II. Two hours, 2d term, Tuesday and Thursday, 1:30 to 3:30. A continuation of the work of course 3. Professor Hunter.

5.—ECOLOGY. Three hours, 1st term, Monday, Wednesday, and Friday, at 10:15. Lectures, readings and field-work on the behavior of insects and their relation to their environments. Open to Juniors and Seniors who have had 1 or 3. Professor Hunter.

6.—ECONOMIC ENTOMOLOGY. Two hours, 1st term, Tuesday and Thursday, at 10:15. Lectures, readings and observations in field on forms of economic value: the beneficial—their habits, life-histories; the injurious—their habits, life-histories, and modes of dealing with such forms. The economic status of the class Insecta. Open to Juniors and Seniors who have had 1 or 3. Professor Hunter.

7.—TEACHERS' COURSE. Three hours, 2d term, 3:30 to 5:30. Laboratory course, adapted to those who expect to teach. Lectures upon life-histories, insect relationships, choice of materials, and modes of presentation. Field-work on habits of social insects. Illustrative cabinets, their preparation and use. Open to Juniors and Seniors who have had zoölogy 1. Professor Hunter.

8.—SEMINARY. One hour, by appointment, throughout the year. Designed for discussion of special subjects and reports upon the more notable current advances in this branch of science. Open to students far enough advanced to do the work.

FOR GRADUATES ONLY.

9.—ORIGINAL INVESTIGATION. Throughout the year, by appointment. Research work in parthenogenesis. Professor Hunter.

10.—ORIGINAL INVESTIGATION. By appointment, throughout the year, including the summer months. Taxonomy, Insecta. Critical study of Kansas fauna. This course has for its object a survey of the species found in the state and is conducted in connection with the State Entomological Commission. Professor Hunter.

11.—MORPHOLOGICAL DEVELOPMENT. Problems assigned with reference to the attainments of individual students. Throughout the year, by appointment. Professor Hunter.

ORGANIC EVOLUTION.

Professor SNOW.

FOR ADVANCED UNDERGRADUATES AND GRADUATES.

1.—THE PRINCIPLES OF EVOLUTION. Lectures and readings. Three hours, 1st term, Monday, Wednesday, and Friday, at 10:15. This course includes a history of the doctrine of evolution and a consideration of the facts which support the doctrine. These facts include the relation of the extinct forms of past ages to the present, the series of embryological changes in the higher animals, the fertilization of flowers by insects, and the geographical distribution of plants and animals. The obsolete theory of spontaneous generation receives attention. Professor Snow.

2.—PRINCIPLES OF EVOLUTION. Four hours, 1st half of 2d

term, Tuesday, Wednesday, Thursday, and Friday, at 10:15. This course is a continuation of course 1, and includes a discussion of the various theories which have been proposed to account for evolution; the comparative influence of environment and heredity, the origin of the races of mankind, the origin of human intellect and conscience, and the relation of the law of evolution to the other great laws of the natural and spiritual world. These two courses are illustrated by occasional stereopticon exhibits. Professor Snow.

FRENCH.

(See Romance Languages and Literatures.)

GEOLOGY AND MINERALOGY.

Professor HAWORTH.
Assistant Professor KAY.

EQUIPMENT.—The library is of first importance for equipment in geology, and apparatus and museums next. The library includes practically all the reports of public surveys made in America, both national and state, and all the leading text-books and special treatises by the leading authorities of the world. Of particular importance is the large number of topographic sheets and folios of the final mapping of the United States Geological Survey. The geological and mineralogical museums are described elsewhere in this catalogue, to which the reader is referred. Large numbers of maps and papier-mache models of geological and topographic land forms, especially chosen from those now on the market, add greatly to the equipment for good, effective work.

ADVICE AS TO CHOICE OF COURSES.—*Geology.* The following courses in geology are designed to meet the requirements of two classes of students: those wishing to become working geologists, and those wishing only a general outline of the subject as a part of a liberal education. In the former case the student is advised to take all the courses offered, as nearly as possible in the order given, or possibly 4 might be brought in at any time after 1. Should the student desire to give only a limited time to the study, he should begin with 1, after which he may take 2, 3, or 4, in any order, with 4 most desirable for those who take only a single year's course. Course 1 is open to all students of the College excepting Freshmen. Courses 1 to 8, inclusive, are open to Juniors and Seniors in the College. Courses 2 to 8, inclusive, are open to graduate students who have not already taken them.

Mineralogy. Students wishing to specialize in mineralogy should take courses 1, 2, and 6, in the order given; those wishing to

specialize in petrography should take courses 1, 3, 4, 5, and 7, in the order given. Should the student desire to give only a limited time to the subjects of mineralogy and petrography, courses 1, 3 and 4 should be chosen. Course 1 is required of all mining and chemical engineering Sophomores, and is open to all Juniors and Seniors of the College who have had qualitative analysis. Courses 2 to 4, inclusive, are open to all students who have completed course 1. Course 5 is open to all students who have had geology 1 and mineralogy 1. Course 6 is open to graduate students only who have completed courses 1 and 2. Course 7 is open to graduate students only who have completed courses 1, 3, and 4.

Geology.

FOR UNDERGRADUATES.

1.—ELEMENTS OF PHYSICAL GEOLOGY. Five hours each term, daily, at 11:15. A study of the elementary principles of general geology, including physical conditions throughout geologic time and the formation of continents; nature and origin of the different kinds of rocks and the rock-forming materials; the destructive process of erosion or denudation, and the economic products obtained by the various mining operations. Professor Haworth.

2.—AREAL GEOLOGY I. Two hours, Tuesday and Thursday, at 10:15. This course is an extension of course 1, with special reference to the stratigraphy of land areas, continental development, the history of animal and plant life upon the earth, and the uses of fossil forms in the identification and correlation of geologic horizons. A special study will also be made of field methods in geology in organizing and conducting geological investigations and geological surveys. It should be taken by all students who contemplate teaching geology or making geological investigations. Must be preceded by course 1. Lectures and library work. Professor Haworth.

3.—AREAL GEOLOGY II. Three hours, 2d term, Monday, Wednesday, and Friday, at 10:15. A continuation of course 2. Professor Haworth.

4.—ECONOMIC GEOLOGY I. Three hours, 1st term, Monday, Wednesday, and Friday, at 9. A general study of the metallic and non-metallic products of the mine, quarry, and well, considered from a scientific and a practical standpoint, including the nature, origin, amount and geographic and geologic distribution of the same. Must be preceded by elementary chemistry and geology 1 or mineralogy 1. Lectures and library work. Professor Haworth.

5.—ECONOMIC GEOLOGY II. Two hours, 2d term, Tuesday and Thursday, at 10:15. A continuation of course 4. Professor Haworth.

6.—PHYSIOGRAPHY. Three hours, 2d term, Monday, Wednesday, and Friday, at 9. A study of the general principles of physiography, with detailed studies of specific areas in latter parts of course, including earth movements, general elevation and depression of land areas, rock disintegration, origin and nature of drainage systems and the life-history of rivers, and origin of surface features and causes which have produced them. Must be preceded by geology 1. Lectures and library work. Professor Haworth.

7.—DYNAMIC GEOLOGY I. Two hours, 1st term, Tuesday and Thursday, by appointment. A brief course on the elementary principles of dynamic geology, to follow course 1 or course 2. It will include a study of continental development, mountain areas, mountain structure, mountain origin, and kindred subjects. Lectures, library and laboratory work. Professor Haworth.

8.—DYNAMIC GEOLOGY II. Three hours, 2d term, Tuesday and Thursday. A continuation of course 7. Professor Haworth.

ADVANCED COURSES FOR GRADUATES.

9.—DYNAMIC GEOLOGY. Graduate students in geology will be provided with opportunity to pursue the study of dynamic geology to any extent desirable, dependent upon the previous training of the student and the object in view. The work may be continued through one or more years, and may be made a major or minor subject for the degree of master of arts or doctor of philosophy. By appointment. Professor Haworth.

10.—PHYSIOGRAPHY. Opportunity is offered graduate students to pursue the study of physiography for one or more years, dependent upon the previous training and end in view. It may be elected either as a major or minor for the degree of master of arts or doctor of philosophy. By appointment. Professor Haworth.

11.—ECONOMIC GEOLOGY. Opportunity is offered graduate students to pursue the study of the subject throughout the year for one or more years, and to choose it as a major or minor subject for the degree of master of arts or doctor of philosophy. By appointment. Professor Haworth. Students electing either of the above courses as a major for the degree of doctor of philosophy must devote at least half their time to it for three years, and must present a dissertation embodying the results of original work done in connection therewith, in accordance with the general conditions governing the granting of this degree by this University and with the requirements of the department of geology.

12.—SUMMER FIELD-WORK. Opportunity is offered advanced students in geology, either graduate or undergraduate, to do field-work in geology in connection with the University Geological Survey of Kansas, under the guidance of the department of geology, for which credit will be given the same as for work done in the classroom and laboratory. By appointment. Professor Haworth.

Mineralogy.

FOR UNDERGRADUATES.

1.—ELEMENTARY MINERALOGY I. Five hours, 2d term, daily, 3:30 to 5:30. A brief course in crystallography, blowpipe analysis, and systematic mineralogy, consisting of lectures and laboratory work, as follows: *Crystallography*.—A study of the properties of crystals and the crystal systems, with laboratory exercises, using natural crystals and crystal models. Considerable work is required in drawing crystal forms and measuring crystal angles. Moses and Parsons' Text-book on Mineralogy will be used. *Chemical Mineralogy*.—In blowpipe analysis sufficient practice is required to familiarize the student with all the ordinary blowpipe tests for mineral identifications. *Physical Mineralogy*.—The student is required to become thoroughly familiar with the methods of identifying all the more common minerals by their physical characters, such as crystalline form, cleavage, gravity, luster, streak, hardness, and color. The uses, localities and productions of the minerals of economic importance are discussed. Open to Juniors and Seniors who have had qualitative analysis. It may also be taken for graduate credit, provided some extra time is given to it. Assistant Professor Kay.

FOR ADVANCED UNDERGRADUATES AND GRADUATES.

2.—SYSTEMATIC MINERALOGY. Five hours, 1st term, daily, by appointment. This course is a continuation of mineralogy I, including an extended study of mathematical and physical crystallography, including optical properties, crystal measurements with reflection goniometers, crystal projection, and study of the most approved classification of minerals. Open to all students who have had mineralogy I. Assistant Professor Kay.

3.—PETROGRAPHY. Three hours, 1st term, Monday, Wednesday, and Friday, by appointment. This course includes a study of the mineralogical and chemical composition of rocks, their origin, structural features, and classification. The laboratory equipment for this course consists of carefully selected collections representing all the principal rock-making minerals, rock families, and rock types, together with several hundred thin sections for study with the petro-

graphical microscope. The most recent field classification of rocks, Rosenbuch's classification and the quantitative classification are discussed. Open to all students who have had mineralogy 1. Assistant Professor Kay.

4.—PETROGRAPHY. Three hours, 2d term, by appointment. A continuation of course 3. Assistant Professor Kay.

5.—VOLCANISM AND METAMORPHISM I. Three hours, 2d term, by appointment. (1) Volcanoes and volcanic phenomena, with a discussion of the theories concerning them. (2) Principles of metamorphism and metamorphic rocks. The forces, agents and general processes of metamorphism; the classification and description of the metamorphic sedimentary and the metamorphic igneous rocks. Van Hise's Treatise on Metamorphism will be used as a text. Open to all students who have had geology I and mineralogy I. Assistant Professor Kay.

FOR GRADUATES ONLY.

6.—ADVANCED WORK AND ORIGINAL WORK IN MINERALOGY. Three, five or ten hours, throughout the year, by appointment. This course may be chosen by graduate students who have completed courses 1 and 2 and who wish to specialize in the subject of mineralogy. Assistant Professor Kay.

7.—ADVANCED WORK AND ORIGINAL WORK IN PETROGRAPHY. Three, five or ten hours, throughout the year, by appointment. This course may be chosen by graduate students who have completed courses 3, 4 and 5 and who wish to specialize in the subject of petrography. Assistant Professor Kay.

GERMANIC LANGUAGES AND LITERATURES.

Professor CARRUTH.
Associate Professor ENGEL.
Assistant Professor CORBIN.
Assistant Professor KRUSE.
Assistant Professor CAMPBELL.
Assistant Professor HOLST.
Mr. BRIGGS.
Miss PALMER, Fellow.

EQUIPMENT.—The German department has an excellent stereopticon and 800 stereopticon slides, illustrating scenery, costumes, and biography; a small number of excellent photographs and prints in frames; a complete set of twenty German wall-maps, showing the various separate states, and a few busts. There are 2400 volumes in the library of the German department, and five philological and seven literary journals are received.

There has just been purchased a valuable collection of 3000 un-

bound dissertations and school programs, covering all fields of Germanistic scholarship. With the present library and this acquisition of special studies, the German department will be prepared to encourage graduate study at the University of Kansas in Germanic languages.

The Deutscher Verein owns a piano, which is used for accompanying the German songs of the verein.

ADVICE AS TO CHOICE OF COURSES.—Students who plan to become teachers of German in high schools and academies should consult with the head of the department before the close of the Sophomore year. An outlined course for the four College years will be found on the department bulletin-board, and is recommended to the careful attention of those concerned. Courses 1 to 11, inclusive, are open to all students of the College. Courses 12 to 19 are open to both undergraduates in the College and to graduate students. The full amount of Latin, 1, 2, 3, for entrance is required as preparation for German 1 and 2. Students who enter with a deficiency in Latin and wish to take German 1 may do so in a practice class, taught by an advanced student in the Lawrence high school, or with a private tutor.

FOR UNDERGRADUATES ONLY.

1.—OUTLINE OF GRAMMAR. Five hours, 1st term, at 8, 9, 10:15, 11:15, 1:30 to 3:30, 2:30; 2d term, at 1:30. The first eighteen lessons of Carruth's Otis's Grammar, with composition exercises; Carruth's Reader, about fifty pages. Professor Carruth, Associate Professor Engel, Assistant Professor Corbin, Assistant Professor Kruse, Assistant Professor Campbell, and Mr. Briggs. The eight o'clock division is for students who intend to make German a major study. In this more insistence will be laid upon speaking German. The nine o'clock division is for students who expect to take only a minimum of German. With the afternoon division, from 1:30 to 3:30, the laboratory method is used, requiring two hours' classroom work and one hour preparation outside. It is open to students of the College only. The other divisions will be determined by convenience of hours alone. Practice classes in beginning German will be conducted at eight o'clock. To these a limited number of students who lack the requirement of entrance Latin will be admitted.

2.—GERMAN READER AND GRAMMAR, completed. Five hours, 1st term, at 2:30; 2d term, at 8, 9, 11:15, and 1:30. CARRUTH'S READER, completed, ZSCHOKKE, KLEIST, HEYSE (100 pp.), and SCHILLER'S WILHELM TELL (complete). Also special exercises in word order and auxiliary verbs, and sight-reading. Associate Pro-

fessor Engel, Assistant Professor Corbin, Assistant Professor Kruse, Assistant Professor Campbell, and Mr. Briggs.

3.—GERMAN PROSE. Five hours, 1st term, at 8, 9, 10:15, 11:15, 1:30, and 3:30; 2d term, at 9. FREYTAG'S *DIE JOURNALISTEN. GESCHICHTE DES 30-JÄHRIGEN KRIEGES*. Preceded by review of grammar. Sight-reading. Associate Professor Engel, Assistant Professor Corbin, Assistant Professor Kruse, Assistant Professor Campbell, and Mr. Briggs.

4.—SCHILLER'S *WALLENSTEIN*. Five hours, 2d term, at 8, 9, 10:15, 11:15, and 3:30; 1st term, at 1:30. Outline of German literature in dictations and lectures. Associate Professor Engel, Assistant Professor Corbin, Assistant Professor Kruse, Assistant Professor Campbell, and Mr. Briggs.

5.—GERMAN COMPOSITION. Three hours, 1st term, at 10:15. Translation of connected English, Poll's or v. Jagemann's German Prose Composition, v. Jagemann's German Syntax, Fossler's Practical German Conversation. Associate Professor Engel, Assistant Professor Corbin, and Assistant Professor Holst.

6.—GERMAN COMPOSITION. Two hours, 2d term, at 10:15. A continuation of course 5, with special drill exercises in grammar and syntax and original compositions. Open to students who have had course 5, and to others only by special permission of the instructor. Associate Professor Engel and Assistant Professor Corbin.

7.—SCHILLER'S DRAMAS. Three hours, 2d term, at 10:15. *Maria Stuart, Die Jungfrau von Orleans*. Associate Professor Engel.

8.—GOETHE'S *FAUST* (parts I and II). Three hours, 2d term, Monday, Wednesday, and Friday, at 11:15. Professor Carruth and Assistant Professor Corbin.

9.—GOETHE'S *IPHIGENIE*. Two hours, 1st term, Tuesday and Thursday, at 11:15. Professor Carruth and Assistant Professor Corbin.

10.—LESSING'S *NATHAN DER WEISE*. Three hours, 1st term, Monday, Wednesday, and Friday, at 11:15. Professor Carruth and Associate Professor Engel.

11.—SCHILLER'S *DIE BRAUT VON MESSINA*. Two hours, 1st term, Tuesday and Thursday, at 10:15. Professor Carruth and Associate Professor Engel.

FOR ADVANCED UNDERGRADUATES AND GRADUATES.

12.—GERMAN LITERATURE. Five hours, 1st term, at 10:15. An outline history. Lectures, the class following Scherer, Francke, or Kluge. Essays and criticisms by members of the class. Open only

to students who have had courses 3 and 4. Associate Professor Engel.

13.—GERMAN LITERATURE OF THE EIGHTEENTH CENTURY. Five hours, 2d term, at 10:15. Klopstock, Wieland, Lessing, Herder, Goethe, and Schiller. Reading the chief works, with reviews. Professor Carruth.

14.—GERMAN HISTORICAL NOVELS. Five hours, 1st term, at 10:15. Hauff, Scheffel, etc. Careful reading in class of one work by each author; others outside. Lectures on the history of the novel and on methods and schools in fiction. Theses on separate authors and on the whole course, by members of the class. Professor Carruth. (Not given in 1907-'08.)

15.—GERMAN HISTORICAL NOVELS (continued). Five hours, 2d term, at 10:15. Professor Carruth. (Not given in 1907-'08.)

16.—THE LYRICS AND BALLADS OF GOETHE AND SCHILLER. Three hours, 1st term, Monday, Wednesday, and Friday, by appointment. Study of the lyrics and ballads in connection with the lives and literary development of the authors. Lectures on the nature of the lyric and ballad. Study of lyric forms. Students must satisfy the instructor as to their preparation for the course. Assistant Professor Corbin.

17.—THE ROMANTIC LYRIC. Continuation of 16. Two hours, 2d term, Tuesday and Thursday, by appointment. Lectures on the romantic school in general. Study of the principal lyric writers from Novalis to Heine. Assistant Professor Corbin.

18.—THE REALISTIC DRAMA. Three hours, 1st term, by appointment. Hebbel, Ludwig, Anzengruber. Lectures, readings, and reports. Should be preceded by courses 4, 5, and 6. Assistant Professor Kruse.

19.—THE NATURALISTIC DRAMA. Hauptmann, Sudermann. Lectures, readings, and reports. Two hours, 2d term, by appointment. Should be preceded by course 18. Assistant Professor Kruse.

Courses 20-25 are primarily for Graduates.

20.—HISTORY OF THE GERMAN LANGUAGE. Two hours, 1st term, Tuesday and Thursday, at 1:30. Introduction to philological study. Lectures and library work. Assistant Professor Holst.

21.—GOTHIC. Three hours, 1st term, Monday, Wednesday, and Friday, at 1:30. Phonetics, grammar, and translations. Assistant Professor Holst.

22.—OLD NORSE. Three hours, 2d term, Monday, Wednesday, and Friday, at 1:30. Noreen's Altnordische Grammatik; Bren-

ner's Handbuch; Vigfusson and Powell's Reader. Assistant Professor Holst.

23.—MIDDLE HIGH GERMAN. Five hours, 2d term, by appointment. Paul's *Mittelhochdeutsche Grammatik*. *Nibelungenlied*. Hartmann, *Der arme Heinrich*. Selections from Walther von der Vogelweide. Lectures. Associate Professor Engel.

24.—LUTHER AND THE SIXTEENTH CENTURY. Two hours, 2d term, Tuesday and Thursday, by appointment. Reading and grammatical study of the German literature of the reformation, preceded by an outline of historical German grammar. Professor Carruth.

25.—GERMANIC MYTHOLOGY. Two hours, 2d term, Tuesday and Thursday, at 1:30. Professor Carruth.

26.—TEACHERS' COURSE. Five hours, 2d term. Advanced grammar, with theory and practice of language teaching. Intended especially for those who desire to fit themselves for teaching German in high schools. Open only to the best students of the department. Professor Carruth and Assistant Professor Corbin.

27.—GERMANIC MYTHOLOGY. Two hours, 2d term, Tuesday and Thursday, at 1:30. Professor Carruth.

GREEK.

Professor WILCOX.

Associate Professor STERLING.

EQUIPMENT.—Twenty-nine casts of sculpture, five models, a relief-map, numerous wall-maps, 800 photographs, 500 plates (many colored), 49 illustrated folios, 2400 volumes in library, 15 current periodicals, 1600 stereopticon slides.

ADVICE AS TO CHOICE OF COURSES.—Those who aim to become teachers of Greek or Latin or any other language, or who take Greek for general culture or discipline, should take the courses in order from 1 to 18, and 27 and 28, or as many of them as they have not taken before entering the University, or have time to take. Students preparing for the ministry will find it best to follow the same plan, and take the course in New Testament Greek in addition, or in place of some course in classical Greek they might otherwise take. Students who aim simply at reading the New Testament in the original for their own pleasure or profit can accomplish that by taking courses 21 and 22. Students of science and English may get in course 19 a good working knowledge of the scientific and other English words that are derived from Greek; this course may also serve as an introduction to classical Greek, being followed by

courses 20 and 4. Students of all literatures who can give no more time to Greek may get a very good idea of the content of Greek literature, and especially a valuable knowledge of mythology, from courses 23 and 24, or a partial knowledge from either of those courses. Those who desire an introduction to the architecture of all periods may get it in course 25; to the sculpture and painting of all periods, in course 26. A very rapid survey of the great arts of the Greek and Roman periods is made in course 27; of mediæval and modern times, in course 28. Greek students should take also the courses in Greek and Roman history, in the history of philosophy, and as many literary courses as possible.

FOR UNDERGRADUATES ONLY.

1.—ELEMENTARY GREEK. Five hours, 1st term, daily, at 9. Gleason's Greek Primer, or White's First Greek Book. Associate Professor Sterling.

2.—XENOPHON'S ANABASIS, or equivalent prose. Five hours, 2d term, daily, at 9. Associate Professor Sterling.

3.—HOMER'S ILIAD. Three hours, 1st term, Monday, Wednesday, and Friday, at 10:15. Professor Wilcox.

4.—THUCYDIDES, selections. Two hours, 1st term, Tuesday and Thursday, at 10:15. Professor Wilcox.

5.—HOMER'S ODYSSEY. Three hours, 2d term, Monday, Wednesday, and Friday, at 10:15. Professor Wilcox.

6.—HERODOTUS (selections). Two hours, 2d term, Tuesday and Thursday, at 10:15. Professor Wilcox.

7.—PLATO'S APOLOGY AND CRITO. Three hours, 1st term, Monday, Wednesday, and Friday, at 11:15. Associate Professor Sterling.

8.—SOPHOCLES. Two hours, 1st term, Tuesday and Thursday, at 11:15. Associate Professor Sterling.

9.—EURIPIDES AND ÆSCHYLUS. Three hours, 2d term, Monday, Wednesday, and Friday, at 10:15. Associate Professor Sterling.

10.—DEMOSTHENES. Philippics. Two hours, 2d term, Tuesday and Thursday, at 11:15. Associate Professor Sterling.

20.—ATTIC GREEK. Two hours, 2d term, Tuesday and Thursday, at 10:15. Stories, legends, and selections from prose authors. Continuation of 19. Associate Professor Sterling.

21.—ELEMENTARY NEW TESTAMENT GREEK. Three hours, 2d term, Monday, Wednesday, and Friday, at 10:15. Associate Professor Sterling.

22.—NEW TESTAMENT. Two hours, 1st term, Tuesday and

Thursday, at 10:15. Reading of select passages in Westcott and Hort's text. Associate Professor Sterling.

27.—GREEK ART. One hour, 1st term, Tuesday, at 4:30. The essentials and fundamental principles of Greek architecture, sculpture, and painting. Illustrated lecture and two hours' outside reading. Professor Wilcox.

28.—GREEK ART IN RELATION TO LATER AND MODERN ART. One hour, 2d term, Tuesday, at 4:30. The essential and fundamental principles of Roman, mediæval and modern art, with especial reference to survivals and revivals of ancient art elements. Illustrated lecture and two hours' outside reading. Professor Wilcox.

FOR ADVANCED UNDERGRADUATES AND GRADUATES.

11.—THE CLOUDS OF ARISTOPHANES AND MEMORABILIA OF XENOPHON. Three hours, 1st term, Monday, Wednesday, and Friday, at 9, or by appointment. Professor Wilcox.

12.—THE GORGIAS OF PLATO. Two hours, 1st term, Tuesday and Thursday, at 9, or by appointment. Professor Wilcox.

13.—GREEK HISTORY AND POLITICS. Three hours, 2d term, Monday, Wednesday, and Friday, at 9, or by appointment. Representative selections of Greek life and thought in Wilamowitz-Moellendorf's Reader. Professor Wilcox.

14.—GREEK PHILOSOPHY, COSMOGONY, ETC. Two hours, 2d term, Tuesday and Thursday, at 9, or by appointment. Selections in Wilamowitz-Moellendorf's Reader on philosophy, cosmogony, astronomy, mathematics, medicine, esthetics, and grammar. Professor Wilcox.

15.—GREEK LITERARY CRITICISM. Three hours, 1st term, Monday, Wednesday, and Friday, at 9, or by appointment. The Frogs of Aristophanes and Chœphoroi of Æschylus, and Aristotle's Poetics. (Not given in 1907-'08.) Professor Wilcox.

16.—LYRIC POETRY (elegiac and iambic). Two hours, 1st term, Tuesday and Thursday, at 9, or by appointment. (Not given in 1907-'08.) Professor Wilcox.

17.—GREEK LITERARY CRITICISM. Two hours, 2d term, Tuesday and Thursday, at 9, or by appointment. The Electras of Sophocles and Euripides, and Aristotle's Poetics. (Not given in 1907-'08.) Professor Wilcox.

18.—LYRIC POETRY (melic). Three hours, 2d term, Monday, Wednesday, and Friday, at 9, or by appointment. Alcæus, Sap-

pho, Simonides, Pindar, and Bacchylides. (Not given in 1907-'08.) Professor Wilcox.

19.—THE GREEK IN ENGLISH. Three hours, 1st term, Monday, Wednesday, and Friday, at 11:15. The elements of Greek with especial reference to English. The course may serve as an introduction to classical Greek. Associate Professor Sterling.

23.—GREEK POETRY IN TRANSLATIONS. Three hours, 1st term, Monday, Wednesday, and Friday, at 11:15. Lectures, recitations, private reading, writing of themes. Professor Wilcox.

24.—GREEK DRAMA IN TRANSLATIONS. Two hours, 2d term, Tuesday and Thursday, at 11:15. Lectures, recitations, private reading, writing of themes. Professor Wilcox.

25.—GREEK ARCHITECTURE. Two hours, 1st term, at 11:15. Includes the fundamental principles of all styles, with especial reference to the survivals and revivals of Greek elements. Lectures, private reading, recitations. Professor Wilcox.

26.—GREEK SCULPTURE AND PAINTING. Three hours, 2d term, Monday, Wednesday, and Friday, at 11:15. Includes for purposes of comparison and appreciation a summary view of the sculpture and painting of later and modern times. Professor Wilcox.

HARMONY. (See Music.)

AMERICAN HISTORY AND POLITICAL SCIENCE.

Professor HODDER.

Assistant Professor BATES.

Mr. GIFT, Assistant.

EQUIPMENT.—The University library is supplied with all the important secondary authorities in American history, and with a considerable amount of source material. Where original editions of early books have been unobtainable, such reprints as Thwaites's Jesuit Relations and the Goldsmid and Macklehorse editions of Hackluyt have been substituted. The sets of Kansas state documents, of congressional debates and of American state papers are complete. The set of congressional documents begins with the second session of the twenty-eighth Congress. For the colonial period, the library has the colonial series of calendars of the British state papers, the New York colonial documents, the New Jersey archives, and other similar sets; and for the period of discovery, the works of Harris and the atlases of Nordenskiöld and Kretschmer. Particular attention has been given to the collection of books relating to Kansas and the trans-Missouri region, and a collection of American travels has been begun. Free access to all but the

rarest books is given to students in the history and sociology reading-room. The supply of maps and atlases for class and reference purposes is adequate.

ADVICE AS TO CHOICE OF COURSES.—An increase in the teaching force in this department renders it possible to extend the work in American history to the first years of the College course and to increase very considerably the number of courses offered in political science.

Courses 1 and 2 furnish a general view of American political history, intended for students who do not care to make a special study of the subject, and also as an introduction to more advanced courses. Courses 3 and 4 present a similar view of American government. Courses 1 and 3 and 2 and 4 may be taken together to advantage. Any or all of them may be used in fulfilment of the historical units required in the preparatory school and College. Courses 1, 2, 5, 6, 13 and 14 present three years of continuous work in American history, and courses 3, 4 and 7 to 12, inclusive, present three years of continuous work in political science.

Students desiring recommendation as teachers are required to take either courses 1, 2, 5, 6, and 7, or 5, 6, 7, 13, and 14.

FOR UNDERGRADUATES.

1.—AMERICAN HISTORY I. Three hours, 1st term, Monday, Wednesday, and Friday, at 9. A survey of American political history from 1763 to 1832, covering the revolution, the adoption of the constitution, and the rise of nationality. Open to all students. Assistant Professor Bates.

2.—AMERICAN HISTORY II. Three hours, 2d term, Monday, Wednesday, and Friday, at 9. A survey of American political history from 1832 to 1876, covering the slavery controversy, secession, and reconstruction. Open to all students. Assistant Professor Bates.

3.—AMERICAN GOVERNMENT I. Two hours, 1st term, Tuesday and Thursday, at 9. A study of federal, state and local government, in theory and in practice. Open to all students. Assistant Professor Bates.

4.—AMERICAN GOVERNMENT II. Two hours, 2d term, Tuesday and Thursday, at 9. Open to all students. A study of the rise, organization and operation of political parties, and of the practical questions presented by party government. Assistant Professor Bates.

FOR ADVANCED UNDERGRADUATES AND GRADUATES.

5.—AMERICAN COLONIAL HISTORY. Three hours, 1st term, Monday, Wednesday, and Friday, at 2:30. This course covers the discovery of America, the period of Spanish and French exploration, and the origin and development of the English colonies. Professor Hodder.

6.—THE REVOLUTION AND THE CONSTITUTION. Three hours, 2d term, Monday, Wednesday and Friday, at 2:30. A study of the causes and results of the American revolution and of the formation of the constitution. Continues but not necessarily preceded by course 5. Professor Hodder.

7.—AMERICAN CONSTITUTIONAL LAW. Two hours, 1st term, Tuesday and Thursday, at 2:30. A study of the judicial construction of the constitution of the United States from a political rather than from a legal point of view. Professor Hodder.

8.—PUBLIC INTERNATIONAL LAW. Two hours, 2d term, Tuesday and Thursday, at 2:30. A statement of fundamental principles, illustrated by cases drawn from American diplomatic history. Professor Hodder.

9.—EUROPEAN CONSTITUTIONS. Three hours, 1st term, Monday, Wednesday, and Friday, at 10:15. A comparative study of the chief governments of Europe with respect to their structure and operation. Assistant Professor Bates.

10.—POLITICAL THEORIES. Three hours, 2d term, Monday, Wednesday, and Friday, at 10:15. A study of the historical development of theories of the state and an analysis of the political theories of the more important writers on government. Assistant Professor Bates.

11.—MUNICIPAL GOVERNMENT. Two hours, 1st term, Tuesday and Thursday, at 10:15. A comparative study of the government of cities in Europe and the United States and a consideration of the various problems that confront them. Assistant Professor Bates.

12.—COLONIAL GOVERNMENT. Two hours, 2d term, Tuesday and Thursday, at 10. A study of the development of the principal colonial systems and of the methods of colonial administration at the present time. Assistant Professor Bates.

13.—PRESIDENTIAL ADMINISTRATIONS I. Five hours, 1st term, daily, at 3:30. The political and constitutional history of the United States from 1789 to 1840. A topical treatment of the most important phases of American history. The principal subjects of study are financial and tariff history, foreign relations, the rise and growth of political parties, the history of the slavery controversy,

and the expansion of the United States. Open to all Seniors and Graduates and to Juniors who have had courses 5 and 6. Professor Hodder.

14.—PRESIDENTIAL ADMINISTRATIONS II. Five hours, 2d term, daily, at 3:30. The political and constitutional history of the United States from 1840 to 1868. Treats the causes and results of the civil war. Continuation of course 13. Professor Hodder.

15 and 16.—AMERICAN HISTORICAL SEMINARY. Five hours, 1st and 2d terms, by appointment. A special investigation from the sources of particular topics chosen with a view to the special needs of the student. Open to Graduates and to Seniors who have had courses 1, 2, 5 and 6. Professor Hodder and Assistant Professor Bates.

EUROPEAN HISTORY.

Professor ABBOTT.

Assistant Professor BECKER.

Assistant Professor NOTESTEIN.*

Assistant Professor CRAWFORD.

Mr. KLINGBERG, Fellow.

EQUIPMENT.—The department of European history is provided with over fifty large wall-maps, forty smaller maps, besides historical charts and the more important historical atlases, together with a considerable number of framed portraits, engravings, and photographs. With the departments of American history, sociology, and economics, it occupies the large reading- and seminary-room on the second floor of the Spooner Library, and with the former it shares a smaller room for the use of the more advanced students in investigation and seminary work. The general collection of books in European history comprises, in addition to a reference library, such sets as the *Monumenta Historica Germaniæ*, the *Scriptores Rerum Italicarum*, the *Parliamentary History*, *Reports of the Historical MSS. Commission*, the *English and Irish Statutes at Large*, the *Journals of the House of Lords and of the House of Commons*, *Rymer's Fœdera*, the *Reports of the Royal Historical Association*, *Howell's State Trials*, and the series of English state papers, domestic, foreign, and colonial, now being completed as rapidly as possible.

ADVICE AS TO CHOICE OF COURSES.—The courses in European history are designed for three classes of students: those desiring only a general knowledge of history, those desiring to use their history in connection with work in other lines, and those desiring to specialize in history. The courses are so arranged as to offer

* Absent on leave, 1907-'08.

continuous work along several lines. A course in general European history should cover courses 3, 4, 5, 6, 8, 9, and 12, inclusive. In English history, courses 1, 2, 7, 15 and 16 are to be noted. For classical students, courses 3, 4, 14 and 19 will be found of special importance. For those specializing in modern languages, courses 5, 6, 8, 9, 12 and 21 will best supplement work in the French, German, Italian, and Spanish. For those specializing in English, see courses 1, 2, 7, and 12. The attention of those working in American history is especially called to the courses in English history and colonization, namely, 1, 2, 7, 10, and 11, as well as to course 12, in modern Europe. Special attention of those doing most of their work in history and those expecting to teach history is called to courses 17 and 18, in historical method. In general, it is expected that those intending to do work in European history in the Junior and Senior years will have had at least two of the courses offered in the Freshman and Sophomore years. Those expecting to receive recommendations to teach history will find it necessary to have taken courses 1, 2, 3, 4, 5, 6, at least three advanced courses, of which 12 must ordinarily be one, and the teachers' course, 18.

FOR UNDERGRADUATES ONLY.

1.—ENGLISH HISTORY Ia, 400–1485. Two hours, 1st term, Tuesday and Thursday, at 8 and 9. Open to all students of the College. Designed as an introduction to all history work of the Junior and Senior years. Recitations, with lectures and assigned reading.

ENGLISH HISTORY Ib, 400–1603. Three hours, 1st term, Monday, Wednesday, and Friday, at 8 and 9. Same as course Ia. Assistant Professor Notestein.

2.—ENGLISH HISTORY IIa, 1485–1832. Three hours, 2d term, Monday, Wednesday, and Friday, at 8 and 9. A continuation of course Ia. Cannot be taken by those who have had course Ib.

ENGLISH HISTORY IIb, 1603–1832. Two hours, 2d term, Tuesday and Thursday, at 8 and 9. A continuation of course Ib. Cannot be taken by those who have had course Ia. Assistant Professor Notestein.

3.—GREEK HISTORY. Two hours, 1st term, Tuesday and Thursday, at 9 and 11:15. Designed, with the following course, as an introduction to Junior and Senior work in European history, and to accompany work in the classical departments. (See course 27, Greek department.) Recitations, with lectures and assigned reading. Open to all students of the College. Assistant Professor Becker.

4.—ROMAN HISTORY. Three hours, 2d term, Monday, Wednes-

day, and Friday, at 10:15 and 11:15. Designed, with the preceding course, as an introduction to Junior and Senior work in European history, and to accompany work in the classical departments. (See Greek course 27.) Recitations, with lectures and assigned reading. Open to all students of the College. Assistant Professor Becker.

5.—MEDIÆVAL HISTORY I. Three hours, 1st term, Monday, Wednesday, and Friday, at 8 and 9. The history of Europe from the fall of Rome to the renaissance. A general course, designed, with the following course, especially as an introduction to the work in modern European history. (See also Greek course 28.) Recitations, lectures, and assigned reading. Open to all students of the College who have had one year's work in history in the University or two years in high school. Assistant Professor Becker.

6.—MEDIÆVAL EUROPEAN HISTORY II. Three hours, 2d term, Monday, Wednesday, and Friday, at 8 and 9. General course. The history of Europe from the renaissance to 1763. A continuation of the above, and designed, with it, to form an introduction to work in modern European history. Open to all students of the College who have had course 5, or who have had one year's work in history in the University or two years in high school. Recitations, lectures, and reading. Assistant Professor Becker.

FOR UNDERGRADUATES AND GRADUATES.

7.—ENGLISH CONSTITUTIONAL HISTORY. Three hours, 1st term, Monday, Wednesday, and Friday, at 11. A general course in the elements of the constitution and administration of England, with special reference to modern English government and its constitutional principles at home and abroad. Open to Juniors, Seniors, and Graduates. Assistant Professor Notestein.

8.—EUROPE IN THE SEVENTEENTH AND EIGHTEENTH CENTURIES. Three hours, 2d term, Monday, Wednesday, and Friday, at 10:15. The history of Europe from 1600 to 1789, with the emphasis on the political, economic and intellectual conditions which prepared the way for the French revolution. Lectures and recitations on assigned topics. Assistant Professor Notestein.

9.—THE FRENCH REVOLUTION AND NAPOLEONIC ERA. Three hours, 1st term, Monday, Wednesday, and Friday, at 1:30. The history of Europe from 1789 to 1815. With additional requirements of reading and reports, may be counted as a graduate course. Lectures, recitations, and assigned reading. Open to Juniors and Seniors. Professor Abbott.

10.—EUROPEAN COLONIZATION I. Two hours, 1st term, Tuesday and Thursday, at 10:15. The history of Europeans outside of Europe,

from the sixteenth century to the present. A study of exploration, conquest, and settlement, and early history of European colonies and dependencies (Spanish America, Canada, Australia, India, etc.) Special attention will be given to the growth of the British empire. Open to Juniors, Seniors, and Graduates. With additional requirements of reading and reports, may be counted as a graduate course. Lectures, recitations, and assigned reading. Professor Abbott.

11.—EUROPEAN COLONIZATION II. Two hours, 2d term, Tuesday and Thursday, at 10:15. The history of European peoples, colonies and dependencies outside of Europe, principally in the nineteenth century. It will include some account of the English self-governing colonies, especially Canada, Australia, and South Africa, the British, French, Dutch, German and Belgian colonial empires, the expansion of Russia, and outlines of the history of Mexico, the Central and South American states. Open to Juniors, Seniors, and Graduates. Professor Abbott.

12.—POLITICAL AND CONSTITUTIONAL HISTORY OF MODERN EUROPE. Five hours, 2d term, daily, at 1:30. The history of Europe, including England, from 1815 to the present. Lectures, recitations, and assigned reading. Open to Juniors with permission, Seniors, and Graduates. Professor Abbott.

13.—LATER ROMAN EMPIRE. Two hours, 2d term, Tuesday and Thursday, at 9. Political and institutional history of the later Roman and Byzantine empire, from the third to the fifteenth century. Open to Juniors, Seniors, and Graduates. Lectures, recitations, and reading. Assistant Professor Becker.

14.—ADVANCED ENGLISH CONSTITUTIONAL HISTORY. Three hours, 1st term, hours to be arranged. An advanced course in the constitutional history of England, chiefly from the documents. May be in connection with course 6 or separately. Open to Seniors and Graduates. Professor Abbott.

15.—ADVANCED ENGLISH CONSTITUTIONAL HISTORY. Three hours, 2d term, hours to be arranged. Professor Abbott.

16.—HISTORICAL METHOD. One hour, 1st term, Thursday, at 8. Investigation and presentation. A course in the principles of historical investigation and composition. Designed primarily for advanced students specializing in history and looking toward preparation for a thesis. Required of all candidates for the master's degree and recommended to all intending teachers of history. Study and practice in investigation and writing. Lectures, reports, assigned reading, and comparative study of historical compositions; theses, monographs, and histories. Professor Abbott and Assistant Professor Becker.

17.—HISTORICAL METHOD. One hour, 2d term, Thursday, at 8. Teachers' course. Designed primarily for those expecting to teach history in secondary schools. Required of all candidates for a teacher's certificate in history. Lectures and reports on methods, materials and preparation for teaching, including bibliography and uses of library. Assigned reading and conferences. Professor Abbott, Assistant Professor Becker, and Miss Watson.

18.—ROMAN INSTITUTIONS OF THE EMPIRE. Two hours. 1st term, hours to be arranged. Assistant Professor Becker.

19.—MEDIÆVAL INSTITUTIONS. Two hours, 1st term, Tuesday and Thursday, at 10:15. A study of the political and ecclesiastical institutions of western Europe from the ninth century to the fourteenth. Lectures, recitations, and reading. Assistant Professor Becker.

20.—RENAISSANCE AND REFORMATION. Three hours, 1st term, Monday, Wednesday, and Friday, at 10:15. A more advanced study of the intellectual and religious revolt of the fifteenth and sixteenth centuries. Assistant Professor Notestein.

21.—HISTORICAL WRITERS I. One hour, 1st term, Tuesday, at 8. In this and the ensuing course, the work of representative historians will be read; one author will be taken up each term. Required of candidates for the master's degree, and recommended to all advanced students in history. Professor Abbott.

22.—HISTORICAL WRITERS II. One hour, 2d term, Tuesday, at 8. A continuation of course 21. Professor Abbott.

23.—SEMINARY. Four hours, 1st term, by appointment. Graduate students and such Seniors as have permission will be admitted to the seminary, work in which will vary from year to year. An endeavor will be made to fit particular conditions of the year and the needs of the students of that year in so far as possible. Professor Abbott.

24.—SEMINARY. Four hours, 2d term, hours by appointment. A continuation of course 19. Professor Abbott.

THESIS. Candidates for the degree of master of arts in this department are subject to the usual requirement of a thesis written under the direction of the department. This must be accompanied by reports and conferences, and should be preceded or accompanied by course 16 and by courses 23 and 24. Hours for conference to be arranged with instructor. 2d term. Professor Abbott.

HISTORY CONFERENCE. The department of European history, with the cooperation of other departments in the College, carries on a conference of those interested in history and allied subjects,

open to all members of the University. The meetings occur, ordinarily, once every two weeks during the first half of the second term.

ITALIAN.

(See Romance Languages and Literatures.)

LATIN LANGUAGE AND LITERATURE.

Professor WALKER.

Associate Professor OLIVER.

Assistant Professor MURRAY.

EQUIPMENT.—The department has about 1700 bound volumes, besides a considerable number of dissertations and other pamphlets; and its annual library appropriation enables it both to secure most of the important new books relating to its work and to fill up gaps in its present equipment. It has been the aim to secure a few of the most important editions of all authors and the most important works representing all branches of Latin study; but especial pains have been taken to provide an adequate apparatus for seminary work on Cæsar, Horace, Juvenal, and Vergil. There is also a good equipment for such courses as topography, private life, epigraphy, and political institutions. The department receives several classical journals and sets of studies and reports, and has complete sets of a few of the most important of them. In addition to the illustrative material of the classical museum, the department has about 1000 photographs, illustrating especially the courses in topography and private life; and these are being added to rapidly.

ADVICE AS TO CHOICE OF COURSES.—To secure either a recommendation as teacher of Latin or a teacher's diploma in Latin, the student must elect at least twenty-five hours in the department of Latin beyond course 3. Courses 4 and 12 must be included. Other courses especially recommended to those who intend to teach are 5, 8, 9, 11, 13, 21, 23, and 24, and the course in ancient history given by the department of European history. Those who wish to do the best work in Latin will need, in addition to a greater amount of Latin, some Greek and a reading knowledge of German.

FOR UNDERGRADUATES ONLY.

1.—**PREPARATORY PROSE COMPOSITION.** Three hours, 2d term, Monday, Wednesday, and Friday, at 1:30. Bennett's Prose Composition, entire. Students whose preparatory course in Latin has been deficient in prose composition are conditioned in the subject and are usually required to take this course, for which no College credit will be given. But if the deficiency is slight they may re-

move the condition by taking the composition of course 2, one day a week. Assistant Professor Murray.

2.—CICERO'S ORATIONS. Five hours, 1st term, daily, at 11:15. The four against Catiline, the one for the Manilian Law, and the one for the Poet Archias. Lessons 23-44 of Bennett's Prose Composition. This course may be taken for College credit by students who enter with Cæsar and Vergil. It is required, without College credit, of those who enter with only Cæsar. Students who make up an entrance condition in Cicero under any private tutor will be examined by the department in both translation and composition. Associate Professor Oliver.

3.—VERGIL'S ÆNEID (six books). Five hours, daily, 1st term, at 8; 2d term, at 8. With the study of mythology and careful practice in metrical reading. The chief stress will be laid on the literary side of the work. Open only to those who enter with three years of Latin and without Vergil. 1st term, Assistant Professor Murray; 2d term, Associate Professor Oliver.

4.—CICERO (De Senectute) and LIVY (one book). Three hours, 1st term, Monday, Wednesday, and Friday, at 9 and 1:30; and 2d term, Monday, Wednesday, and Friday, at 11:15. A reading course in which the emphasis is placed on the linguistic side. Those who elect it are advised to take course 5 at the same time, unless their preparatory work has been done unusually well. Open to all students who have had Cicero's Orations and Vergil, and required of all who expect to elect any more advanced reading course. 1st term, at 9, Associate Professor Oliver; at 1:30, Assistant Professor Murray; 2d term, Assistant Professor Murray.

5.—GRAMMAR AND COMPOSITION. Two hours, 1st term, Tuesday and Thursday, at 9; and 2d term, Tuesday and Thursday, at 11:15. The systematic study of the more important parts of Allen and Greenough's Grammar, and the writing of exercises based on Cicero's De Senectute. Intended to accompany course 4. All students who expect to elect more advanced reading or composition courses must either elect this course or satisfy their instructors that their preparatory work has been done with unusual thoroughness. 1st term, Associate Professor Oliver; 2d term, Assistant Professor Murray.

6.—HORACE (Odes). Three hours, 1st term, Monday, Wednesday, and Friday, at 11:15; and 2d term, Monday, Wednesday, and Friday, at 9. With careful practice in metrical reading. The chief stress is laid on the literary side of the work. Must be preceded by course 4. 1st term, Assistant Professor Murray; 2d term, Associate Professor Oliver.

7.—TERENCE (two plays). Two hours, 2d term, Tuesday and Thursday, at 9. Must be preceded by course 4. Professor Walker.

8.—CICERO'S LETTERS. Three hours, 1st term, Monday, Wednesday, and Friday, at 10:15. The chief stress is laid on the historical points involved, so that the student gets a good knowledge of the period in which Cæsar and Cicero lived. The course is therefore especially helpful to teachers. Must be preceded by five hours beyond course 3. Professor Walker.

9.—HISTORY OF ROMAN LITERATURE. Two hours, 1st term, Tuesday and Thursday, at 10:15. Mackail's Latin Literature, supplemented by lectures and assigned reading in English translations of the more important authors. Open to all students, without regard to their Latin preparation. Associate Professor Oliver.

10.—HORACE (Satires and Epistles). Two hours, 2d term, Wednesday and Friday, at 10:15. Must be preceded by eight hours beyond course 3. Assistant Professor Murray.

11.—ROMAN PRIVATE LIFE. One hour, 2d term, Monday, at 10:15. Johnston's Private Life of the Romans, supplemented by occasional lectures and the use of illustrative material. Open to all students, without regard to their Latin preparation. Associate Professor Oliver.

12.—PROSE COMPOSITION. Two hours, 2d term, Tuesday and Thursday, at 10:15. Part I or part II of Nutting's Advanced Latin Composition. Intended to accompany courses 10 and 11, but may be taken earlier by well-prepared students. Required of all who wish a recommendation from the department as teachers of Latin. Professor Walker.

FOR ADVANCED UNDERGRADUATES AND GRADUATES.

13.—ADVANCED PROSE COMPOSITION. Two hours, 1st term, Tuesday and Thursday, at 2:30. Open to Juniors, Seniors, and Graduates. Must be preceded by course 12. Professor Walker.

14.—PLAUTUS. Two hours, 1st term, Tuesday and Thursday, at 1:30. Open to Juniors, Seniors, and Graduates. Must be preceded by twelve hours beyond course 3. Professor Walker.

15.—VERGIL'S ECLOGUES AND GEORGICS. Two hours, 2d term, Tuesday and Thursday, at 1:30. Open to Juniors, Seniors, and Graduates. Must be preceded by twelve hours beyond course 3. Professor Walker.

16.—LUCRETIVUS. Three hours. (Not given in 1907-'08.) Open to Juniors, Seniors, and Graduates. Must be preceded by twelve hours beyond course 3.

17.—THE ANNALS OF TACITUS. Three hours. (Not given in 1907-'08.) Open to Juniors, Seniors, and Graduates. Must be preceded by twelve hours beyond course 3.

18.—JUVENAL. Three hours, 1st term, Monday, Wednesday, and Friday, at 10:15. Open to Juniors, Seniors, and Graduates. Must be preceded by twelve hours beyond course 3. Associate Professor Oliver.

19.—LITERATURE OF THE EMPIRE. Three hours, 2d term, Monday, Wednesday, and Friday, at 11:15. A study of the history of literature under the empire, supplemented by the reading of portions of the most important works not read in courses 17 and 18. Open to Juniors, Seniors, and Graduates. Must be preceded by twelve hours beyond course 3.

20.—THE TOPOGRAPHY OF ROME. Two hours, 2d term, Tuesday and Thursday, at 9. Lectures and reading. Illustration by the use of photographs and stereopticon. Each member of the class will present a written report on a subject investigated by himself. Open to all Juniors, Seniors, and Graduates. Associate Professor Oliver.

21.—ROMAN POLITICAL INSTITUTIONS. Three hours, 2d term, Monday, Wednesday, and Friday, at 9. A study of the development and form of the Roman governmental system through the republic and the early empire. The course will be conducted by lectures and assigned readings. Open to all Juniors, Seniors, and Graduates who have had the full amount of preparatory Latin. Assistant Professor Murray.

22.—INVESTIGATION IN ROMAN POLITICAL INSTITUTIONS. Two hours. (Not given in 1907-'08.) Given only in connection with course 21. This course will be conducted by additional lectures, and by additional investigations by members of the course. Open to Seniors and Graduates who have specialized in Latin.

23.—CÆSAR'S GALLIC CAMPAIGNS. Three hours, 1st term, Monday, Wednesday, and Friday, at 1:30. A critical study of the Gallic war, with especial reference to military, historical and geographical questions. The course is intended both as an introduction to the methods of the graduate seminary and as a practical course for teachers. Open to properly prepared Seniors and to Graduates. Professor Walker.

24.—VERGIL. Three hours, 2d term, Monday, Wednesday, and Friday, at 1:30. A rapid survey of the contents of the *Æneid*, and a critical study of selected passages which involve difficulties of interpretation or of textual criticism. The course is intended both as

an introduction to the methods of the graduate seminary and as a practical course for teachers. Open to properly prepared Seniors and to Graduates. Professor Walker.

25.—LATIN EPIGRAPHY. Three hours, 2d term, Monday, Wednesday, and Friday, at 9. This course has as its object an acquaintance with the forms and subject-matter of Latin inscriptions. Members will be assigned investigations of the contributions of epigraphy to political, constitutional, and economic history, and to other fields. Open to Seniors and Graduates who have specialized in Latin. Assistant Professor Murray.

26.—INVESTIGATION IN LATIN EPIGRAPHY. Two hours, 1st term, Tuesday and Thursday, at 9. Given only in connection with course 25. Additional investigation of special topics will be expected of members of the course. Assistant Professor Murray.

FOR GRADUATES ONLY.

27.—SEMINARY. Five hours, 1st term, at 11:15. An author or some limited portion of the field of Latin study is chosen each year for special investigation by the graduate students of the department. The work consists largely of papers by members of the course, the object being to train students for original investigation. Latin syntax has been chosen for the year 1907-'08. Professor Walker.

28.—SEMINARY (continued). Five hours, 2d term, at 2:30. A subject for the thesis required of all candidates for the degree of master of arts is expected to present itself in the course of the work, and in the second term a portion of the time is devoted to the working up of that subject. Professor Walker.

MATHEMATICS AND ASTRONOMY.

Professor MILLER.

Professor NEWSON.

Associate Professor VAN DER VRIES.

Assistant Professor ASHTON.

Mr. PITCHER, Instructor.

Mr. MITCHELL, Instructor.

EQUIPMENT.—The following represents the equipment for instruction in mathematics and astronomy:

Mathematics. (a) Models. Eighty-eight models in wood, manufactured by Schröder, Germany. Fifty-three models of algebraic surfaces, embracing cubics, surfaces of revolution, ellipsoids, paraboloids, and hyperboloids, and intersections of the same, made of plaster of Paris, and weighted strings, also from Germany.

Mathematics. (b) Library. The University library contains

more than 1000 volumes of mathematical works, including nearly all the standard treatises on all branches of mathematics. Among others, the following complete sets of journals are specially valuable: The American Journal of Mathematics, Annals of Mathematics, Bulletin and Transactions of the American Mathematical Society, American Mathematical Monthly, Mathematische Annalen, Acta Mathematica, Bulletin de la Societe Mathematique de France, Journal de Mathematiques pures et appliquees, Annali di Matematica, series III. On the bibliographical side are to be found the Jahrbuch der Fortschritte der Mathematik and the Revue Semestrielle des Publications Mathematiques, both sets complete. There are, in addition, the collected works of several of the great mathematicians of the last century. Nearly all the mathematical journals of Europe and America are regularly received.

Astronomy. A six-inch telescope, manufactured by A. Clark & Sons, with eye-glasses ranging in power from 30 to 600; a two-inch transit telescope; a sextant; a twenty-inch celestial globe; 600 astronomical slides; a projection lantern; a full set of E. L. Trouvelot's astronomical plates; star charts and maps; Hagan's Atlas Stellarum Variabilium; Huggins's Atlas of Representative Stellar Spectra; and Atlas Photographique de la Lune, by M. M. Loewy and M. P. Puiseux.

Mathematics.

ADVICE AS TO CHOICE OF COURSES.—Students who desire to take a full course in mathematics are advised to complete the following courses 1-8 by the end of the Sophomore year. These are a necessary preparation for the courses for advanced undergraduates and graduates. During the Junior and Senior years courses 9-17 may be taken in almost any order. These should all be completed by the end of the college course. Students specializing in mathematics are also advised to elect some work in logic and psychology, descriptive geometry and drawing, astronomy, and a full year's work in physics. Such students are also advised to acquire early in their course a reading knowledge of French and German. Usually for this purpose French 1 and 2 and German 1-4 are sufficient. Italian 1 and 2 will also be a great help.

Students who are preparing to become teachers of mathematics in high schools and academies should at least complete courses 1-8 and course 18. This is the minimum requirement for the recommendation of the department. But those aiming at real proficiency in mathematical teaching should take all the courses open to undergraduates.

FOR UNDERGRADUATES ONLY.

1.—SOLID GEOMETRY. Three hours, 2d term, Monday, Wednesday, and Friday, at 1:30. The usual theorems and constructions of standard text-books and applications to the mensuration of surfaces and solids. Wentworth's Solid Geometry. Open to all students who do not offer solid geometry for entrance. Assistant Professor Ashton and assistants.

2.—COLLEGE ALGEBRA. Three hours, both terms, Monday, Wednesday, and Friday—1st term, at 8, 9, 10:15, 11:15, 2:30, and 3:30; 2d term, at 9, 11:15, 2:30, and 3:30. Rapid review of exponents, radicals, and quadratic equations; graphical representation; complex numbers; logarithms; determinants; theory of equations; numerical equations of higher degree. Open to all students of the College. Associate Professor Van der Vries and assistants.

3.—PLANE TRIGONOMETRY. Two hours, both terms, Tuesday and Thursday—1st term, at 8, 9, 10:15, 11:15, 2:30, and 3:30; 2d term, at 9, 11:15, 2:30, and 3:30. The six trigonometric functions; principal formulas of plane trigonometry; solution of triangles and practical problems. Ashton's Trigonometry. Open to all students of the College. May be taken at the same time with course 1 or 2. Assistant Professor Ashton and assistants.

4.—ANALYTIC GEOMETRY I. Two hours, both terms, Tuesday and Thursday—1st term, at 10:15 and 11:15; 2d term, at 8, 9, 10:15, 2:30, and 3:30. The straight line and circle; plane and sphere; loci problems. Ashton's Analytic Geometry. Open to all students who have completed courses 2 and 3. Professor Newson and assistants.

5.—CALCULUS I. Three hours, both terms, Monday, Wednesday, and Friday—1st term, at 10:15 and 11:15; 2d term, at 8, 9, 10:15, 2:30, and 3:30. Differential calculus; fundamental principles; derivatives; applications to geometry and mechanics; maxima and minima; indeterminates; series. Granville's Calculus. Open to students who have completed or are taking course 4. Professor Miller and assistants.

6.—ANALYTIC GEOMETRY II. Two hours, Tuesday and Thursday—1st term, at 10:15, 11:15, and 2:30; 2d term, at 10:15 and 11:15. Conic sections; higher plane curves; solid analytics. Ashton's Analytic Geometry. Open to students who have completed course 4. Professor Newson and assistants.

7.—CALCULUS II. Three hours, Monday, Wednesday and Friday—1st term, at 10:15, 11:15, and 2:30; 2d term, at 10:15 and 11:15. Integral calculus; integration; definite integrals; applica-

tion to lengths, areas, and volumes. Granville's Calculus. Open to students who have completed course 5; may be taken at the same time with course 6. Professor Miller and assistants.

8.—CALCULUS III. Two hours, both terms, Tuesday and Thursday—1st term, at 11:15; 2d term, at 10:15. A continuation of courses 5 and 7. Application of calculus to problems in solid geometry; centers of gravity; moments of inertia; differential equations; vector quantities. Open to students who have completed course 7. Professor Newson and assistants.

9.—SPHERICAL TRIGONOMETRY. Two hours, 2d term, Tuesday and Thursday, at 9. Principal formulas; solution of spherical triangles; applications to navigation and astronomy. Open to students who have completed courses 1, 2, and 3. Miller's Trigonometry. Professor Miller.

18.—TEACHERS' COURSE. Two hours, 2d term, Tuesday and Thursday, at 9. Designed for teachers and students preparing to become teachers of mathematics. It embraces the history, pedagogy and mutual relations of the mathematical subjects usually taught in the public schools from the beginning of the seventh grade to the end of the high-school course. This course consists of (1) history of mathematics, reading, and lectures; (2) a comparative study of the mathematical curricula of the schools of this country and of Europe; (3) discussions on the best methods of presenting the topics; (4) practice-teaching. Open to Juniors and Seniors who have completed courses 1-7. Professor Newson.

FOR ADVANCED UNDERGRADUATES AND GRADUATES.

10.—HIGHER ALGEBRA. Three hours, 1st term, Monday, Wednesday and Friday, at 9. Introduction to the theory of numbers; proofs of the elementary laws of algebra; theory of limits; convergency of infinite series; uniform convergence; differentiation and integration of series; infinite products. Open to students who have completed the undergraduate courses. Assistant Professor Ashton.

11.—THEORY OF EQUATIONS. Three hours, 2d term, Monday, Wednesday, and Friday, at 10:15. General properties and transformation of equations; algebraic solutions of the cubic and quartic; Sturm's theorem; numerical solution of algebraic and transcendental equations. Open to students who have completed courses 1-8. Associate Professor Van der Vries.

12.—DIFFERENTIAL EQUATIONS. Three hours, 2d term, Monday, Wednesday, and Friday, at 11:15. Methods of solving ordinary and partial differential equations; applications to geometry and

physics. Open to students who have completed courses 1-8. Professor Miller.

13.—ANALYTIC MECHANICS. Three hours, 2d term, Monday, Wednesday, and Friday, at 9. Geometry of motion; kinematics; statics; dynamics of a particle and of a rigid body. Open to students who have completed courses 1-8. Professor Newson.

14.—SOLID ANALYTIC GEOMETRY. Three hours, 1st term, Monday, Wednesday, and Friday, at 11:15. Analytic geometry of planes, lines, spheres, and quadric surfaces. Open to students who have completed courses 1-8. Associate Professor Van der Vries.

15.—ADVANCED ANALYTIC GEOMETRY. Three hours, 2d term, Monday, Wednesday, and Friday, at 1:30. Point and line coordinates; poles and polars; reciprocal polars; projection. Open to students who have completed courses 1-8. Assistant Professor Ashton.

16.—ADVANCED CALCULUS. Three hours, 2d term, Monday, Wednesday, and Friday, at 9. Partial differentiation and integration; definite integrals; elliptic integrals; double and multiple integrals; Green's theorem. Open to students who have completed courses 1-8. Professor Newson.

17.—COMPLEX NUMBERS. Two hours, 1st term, Tuesday and Thursday, at 9. Analytic and geometric properties of complex numbers; condition of functionality; circular transformations, applications. Open to students who have completed courses 1-8. Professor Newson.

FOR GRADUATES ONLY.

19.—QUATERNIONS (theory and application). Three hours, by appointment. Professor Miller.

20.—PROJECTIVE GEOMETRY. Three hours. Geometry of the projective group in the plane and in space; analytic and synthetic methods; application to non-Euclidian geometry. By appointment. Professor Newson.

21.—ADVANCED ANALYTIC GEOMETRY AND HIGHER-PLANE CURVES. Three hours. General methods; cubics and quartics; general theory of algebraic curves. By appointment. Associate Professor Van der Vries.

22.—THEORY OF FUNCTIONS OF A COMPLEX VARIABLE. Three hours. Theories of Cauchy, Weierstrass, and Riemann; integration; conformal representation; algebraic functions and their integrals. By appointment. Assistant Professor Ashton.

23.—GALOIS'S THEORY OF EQUATIONS. Three hours. The ap-

plication of the method of groups to the study of algebraic equations. By appointment. Assistant Professor Ashton.

24.—THEORY OF TRANSFORMATION GROUPS. Three or five hours. An analytic and synthetic treatment of various transformations of space, emphasizing the notion of a group of transformations. The groups of collineations, conformal transformations, motions and contact transformations are considered. By appointment. Professor Newson.

25.—THEORY OF SURFACES AND TWISTED CURVES. Three hours. Properties of surfaces of the third and fourth orders, and of certain other general classes of surfaces; also properties of twisted curves of the third and fourth orders. By appointment. Associate Professor Van der Vries.

26.—THEORY OF FUNCTIONS OF A REAL VARIABLE. Three hours. The real number system, point aggregates, limits, continuity, differentiation, integration, proper integrals, improper integrals. By appointment. Professor Newson.

27.—THEORY OF EQUATIONS. B. Three hours. Advanced theory of determinants, methods of elimination, theory of covariants and invariants and of algebraic forms. By appointment. Associate Professor Van der Vries.

Astronomy.

FOR UNDERGRADUATES ONLY.

These courses are open to Juniors and Seniors of the College.

1.—DESCRIPTIVE ASTRONOMY. Three hours, 1st term, Monday, Wednesday, and Friday, at 9. Lectures and recitations, with occasional evenings for observation. Text-book, Young's General Astronomy. Professor Miller.

2.—PRACTICAL ASTRONOMY. Three hours, 2d term, Monday, Wednesday, and Friday, at 9. Theory of least squares. Spherical trigonometry. Use of a sextant and transit instrument, determination of time, latitude and longitude, etc. Text-book, Young's Manual of Astronomy. Professor Miller.

FOR ADVANCED UNDERGRADUATES AND GRADUATES.

3.—CELESTIAL MECHANICS. Three hours. Text-book, Moulton's Celestial Mechanics. By appointment. Professor Miller.

MINERALOGY. (See Geology.)

MUSIC.

Harmony and Musical Appreciation.

Courses 1 and 2 are open to students of all classes. Courses 3 to 6 are open to Juniors, Seniors, and Graduates, the work counting as one full course. Members of the Orchestra and Glee Club may obtain a one-hour credit for their work by enrolling in courses 1 and 2, for which they will substitute their practical work.

1.—MUSICAL APPRECIATION. One hour, 1st term, Monday, at 2:30. A course for those who wish to learn to understand music as listeners, without necessarily being performers. The different styles of music are explained and illustrated, with special reference to the University concerts. Professor Skilton.

2.—DEVELOPMENT OF MUSIC. One hour, 2d term, Monday, at 2:30. Detailed examination of famous compositions with reference to the history of their time and country. Professor Skilton.

3.—HARMONY. Two hours, 1st term, Tuesday and Thursday, at 2. The study of overtones, scales, intervals; the formation and connection of triads and seventh chords with their inversions; close and open harmony; the harmonization of melodies in soprano or bass and of original melodies. Practical work at the piano. Chadwick's Harmony used. Professor Skilton.

4.—HARMONY. Two hours, 2d term, Tuesday and Thursday, at 2. Continuation of course 3. Professor Skilton.

5.—HARMONY. Two hours, 1st term, Tuesday and Friday, at 3. The study of modulations, altered chords, and the inharmonic material of music. Practical work at the piano and original composition. Chadwick's Harmony used. Open only to those who have taken courses 3 and 4. Professor Skilton.

6.—MUSICAL ANALYSIS. Two hours, 2d term, Tuesday and Friday, at 3:30. Review of harmony. The simple homophonic forms, the phrase section, period, two- and three-part-song form. Composition of such forms. Open only to those who have completed courses 3 to 5. Professor Skilton.

PHARMACY.

Professor SAYRE.

Assistant Professor EMERSON.

For equipment, see under School of Pharmacy.

FOR ADVANCED UNDERGRADUATES AND GRADUATES.

1.—PHYSIOLOGICAL AND MEDICAL CHEMISTRY. Five hours, 2d term, 1:30 to 3:30. This course is offered to meet the requirements of medical students. Products of physiological interest are separated

from animal tissues and organs and studied in detail. Special attention is given to the study of carbohydrates, proteins, and the normal and abnormal products of animal life. The second part of the course consists of five weeks of urinalysis, embracing lectures, recitations, and work in both chemical and microscopical laboratories. Professor Sayre and Assistant Professor Emerson.

2.—ADVANCED WORK IN PHYSIOLOGICAL CHEMISTRY.—Analysis of dietetics used in medicine, quantitative valuation of proximate constituents of foods, assay of digestive ferments, and the separation of organic principles of animal tissues, etc. Professor Sayre and Assistant Professor Emerson.

PHILOSOPHY.

Professor TEMPLIN.

Professor BOODIN.

Assistant Professor HOGG.

Miss CLARKE, Fellow.

EQUIPMENT.—The philosophical library contains about 2000 volumes, including complete sets of the leading philosophical and psychological periodicals published in the English, German and French languages. These are all available for students working in the department, and are kept in a special departmental reading-room of the general library.

The work in experimental psychology is carried on in a laboratory equipped with gas, water, and electric currents, direct and alternating, and a considerable supply of apparatus of various kinds, such as is used in modern psychological laboratories. A shop arranged for work in wood, metal and glass enables the instructor and students to improvise many pieces of apparatus not already provided.

FOR UNDERGRADUATES ONLY.

1.—ELEMENTS OF PSYCHOLOGY. Given each term. Three hours, Monday, Wednesday, and Friday, at 9. A general study of mental processes and their laws. Lectures, text-book, and reports, together with laboratory work. James's Psychology is used as a text. Three hours a week of laboratory work are required. This serves to illustrate the principles of psychology and furnishes training in psychological observation. This course is required for admission to all of the following courses in the department except course 2, which may be taken at the same time. Open to Sophomores, Juniors, and Seniors. Professor Boodin and Assistant Professor Hogg.

2.—INTRODUCTION TO PHILOSOPHY. Two hours, both terms, Tuesday and Thursday, at 9. A general survey of the methods,

aïms and results of the various natural sciences, their relations to each other, and their ultimate significance. The course thus serves as an elementary introduction to philosophy. Lectures and assigned readings. Should be preceded by elementary courses in the biological sciences and physical sciences and should precede advanced courses in philosophy. Open to all students in the College who have completed or are taking course 1. Professor Templin.

FOR ADVANCED UNDERGRADUATES AND GRADUATES.

3.—EXPERIMENTAL PSYCHOLOGY. Three hours, 1st term, Monday, Wednesday, and Friday, at 1:30. A laboratory course, following the laboratory work of course 1. Additional work in sensation is first given, followed by a study of the processes of perception, attention, affection, and association. Titchener's *Experimental Psychology Laboratory Manual* is used as a text. Assistant Professor Hogg.

4.—EXPERIMENTAL PSYCHOLOGY.—Three hours, 2d term, Monday, Wednesday, and Friday, at 1:30. A continuation of course 3. Assistant Professor Hogg.

5.—EDUCATIONAL PSYCHOLOGY. Three hours, 1st term, lectures on Tuesday and Thursday, at 9; two hours' laboratory work, by appointment. This course will consist of a deeper study of the general principles of psychology as involved in attention, association, memory, and apperception, considered with special reference to the work of the teacher. Lectures, assigned readings in standard authors, and reports, together with laboratory work. The laboratory work will occupy two hours a week and will supplement the work of the classroom. Professor Boodin and Assistant Professor Hogg. (Not given in 1907-08.)

6.—SOCIAL PSYCHOLOGY. Two hours, 1st term, Tuesday and Thursday, at 9. The study of the social consciousness, especially as shown in the psychology of the crowd and of religion. The work is based upon the writings of Adam Smith, Baldwin, Le Bon, Tarde, James, Starbuck, Coe, etc. Professor Boodin.

7.—LOGIC, DEDUCTIVE AND INDUCTIVE. Three hours, 2d term, Monday, Wednesday, and Friday, at 9. A text-book course, based on Welton's *Manual of Logic*. Emphasis is placed on the theory of induction. Open to Juniors and Seniors who have had course 1. Assistant Professor Hogg.

8.—HISTORY OF PHILOSOPHY. Three hours, first term, Monday, Wednesday, and Friday, at 8. This course outlines the principal movements or tendencies in the history of thought, beginning with the Greek thinkers. In the study of Greek philosophy especially,

the attempt is to show how the philosophical problems became differentiated from the other problems of thought, such as the religious and scientific. Throughout the course careful attention is paid to the relation of the philosophical movements to the movements of history in general. The work is conducted by lectures, assigned readings in a text, in the standard histories, and in the authors themselves. Credit towards a graduate degree will be given for this course only if it is succeeded by course 9. Professor Boodin.

9.—HISTORY OF PHILOSOPHY. Three hours, 2d term, Monday, Wednesday, and Friday, at 8. A continuation of course 8. Open to students who have had course 8 and to others only on special permission of the instructor. Professor Boodin.

10.—PHILOSOPHICAL CLASSICS. Two hours, 1st term, Tuesday and Thursday, at 8. This course furnishes an opportunity for a first-hand and systematic study of some of the more important works and movements in the history of philosophy. The authors taken up will vary with succeeding terms. The course may be pursued together with or following the work in history of philosophy, but not independently of it. To accommodate students desiring to carry both these subjects, they are offered at the same hour but on alternate days. Professor Boodin.

11.—PHILOSOPHICAL CLASSICS. Two hours, 2d term, Tuesday and Thursday, at 8. A continuation of course 10. Professor Boodin.

12.—THE THEORY OF KNOWLEDGE. Two hours, 1st term, hours by appointment. This course will deal with the problem of the relation of truth to reality as based upon Sigwart, Lotze, Bosanquet, Bradley, James, etc. Open to Seniors and Graduates. Professor Boodin.

13.—METAPHYSICS. Two hours, 2d term, by appointment. This course will deal with some of the important tendencies in contemporary philosophic thinking. Both this and the preceding may be taken more than one year. Professor Boodin.

14.—THE PHILOSOPHY OF RELIGION. Three hours, 2d term, Tuesday and Thursday, at 9, third hour by appointment. May be used as sequel to social psychology. This course aims to interpret the religious consciousness, first, by tracing the evolution of religion in two or more important religious systems, such as the Hindoo religion as compared to Hebrew religion. It then takes up the modern idealistic interpretation of the individual nature and God. At the close the instructor's own view-point is given. Lectures, readings, and reports. Professor Boodin.

15. **SYSTEMATIC ETHICS.** Three hours, 1st term, Monday, Wednesday, and Friday, at 9. This course undertakes a critical examination into the psychological foundations of human conduct, a review of the historic ethical theories, and the development of a satisfactory system of ethics. This program includes a study of the following subjects: The emotions, conscience, and will; the Hellenic, Christian, mediæval and modern conceptions of life; hedonism, utilitarianism, socialism, formalism, asceticism, and idealism; responsibility and freedom, duty, right, and virtue, benevolence and justice, guilt and redemption, progress and perfection. The course should be preceded by as many of the foregoing courses as possible, but must be preceded by course 1. Professor Templin.

16.—**PRACTICAL ETHICS.** Two hours, 2d term, Monday and Wednesday, at 9. The application of theoretical principles of conduct to practical problems of life. Following are some of the subjects that will be discussed: Childhood and its problems; the family and the home; the school, the press, the state, and the church; the production, distribution and use of property; professional life, temperance, fashion, and luxury; citizenship, government, and punishment; science, literature, art, culture, and religion. Must be preceded by course 14. Professor Templin.

17.—**ESTHETICS.** Two hours, 2d term, Tuesday and Thursday, at 8. A historical and constructive treatment of the problem of the beautiful, followed by an application of esthetic theory to nature and the fine arts. Lectures, discussions, and assigned readings. Professor Templin.

FOR GRADUATES ONLY.

18.—**SEMINARY.** Five or ten hours, 1st term, by appointment. Opportunity will be given graduate students to continue in a more exhaustive manner the study of any of the subjects offered in the College courses, and to engage in original investigation of unsolved problems. The work will be arranged to suit the special needs of individual students and will be under the immediate supervision of some instructor in the department.

19.—**SEMINARY.** Five or ten hours, 2d term, by appointment. A continuation of the preceding course.

PHYSICAL EDUCATION.

Professor NAISMITH.

Assistant Professor FISH.

Mr. HAGERMAN.

For equipment, see under "Gymnasium."

ADVICE AS TO CHOICE OF COURSES.—Courses 6, 7, 8, 9 and 10 are designed for those who intend to teach this subject. Course 12 is designed for teachers, to give them such a knowledge of the growth and development of the child that they will be able to care for the health of the pupil and to arrange his studies to suit his development. Courses 11 and 12 are arranged with reference to the course in domestic science.

FOR UNDERGRADUATES ONLY.

1.—HYGIENE. One hour, 1st term, men, Monday; women, Thursday. Lectures designed to help the students to maintain health, dealing with food, clothing, exercise, conditions conducive to study, prophylactic treatment, especially in regard to infectious and contagious diseases. Required of Freshmen.

2.—MARCHING. One hour, 1st term. Elementary work in free-hand, dumb-bells, wands, and clubs; hygienic work on the apparatus; sprinting, jumping; gymnastic games for recreation. Required of Freshmen.

3.—ADVANCED WORK IN FREE-HAND. Two hours, 2d term. Calisthenics, and hygienic work on the apparatus; athletics of an all-round nature; games for skill and physical judgment. Required of Freshmen.

4.—EDUCATIONAL WORK WITH LIGHT AND HEAVY APPARATUS. One hour, 1st term. Fencing and broadsword; games requiring skill and self-control; squad leading in calisthenics and apparatus work. Required of Sophomores.

5.—SPECIALIZING IN SOME LINE OF EXERCISE. One hour, 2d term. Boxing and wrestling; conducting games, competitions, and exhibitions. Required of Sophomores.

6.—LEADERS' CLASS. Two hours, by appointment. Analysis of gymnastic movements; invention of drills and combination of exercises; conducting classes; the use of safety methods and apparatus. Open to Juniors and Seniors.

Those physically qualified may elect the following in their season, in place of the foregoing: Football, baseball, tennis, basketball, track and field athletics, hockey, and lacrosse. This work must be under the appointed coach or leader, in order to obtain credit.

Additional courses will be arranged for special work and prescribed work which cannot be done in class.

Every student may receive a thorough medical and physical examination, with the results platted on a chart. Where needed, special exercises will be prescribed.

Every student using the gymnasium or who is a candidate for any University team must pass a satisfactory medical and physical examination.

FOR ADVANCED UNDERGRADUATES AND GRADUATES.

7.—MECHANICAL ANATOMY. Three hours, 1st term, Monday, Wednesday, and Friday, at 9. The study of the bones, articulations and muscles in their relations as mechanical principles. The location of the viscera. The distribution of the principal nerves and blood-vessels, and the topography of the muscles. Open to Juniors and Seniors. Professor Naismith.

8.—THE PRINCIPLES OF ATHLETIC SPORTS AND GAMES. Two hours, 1st term, Tuesday and Thursday, at 9. The analysis of the different athletic events, methods of teaching, the relation of the various games, the physique and mental power that is required in and developed by the different sports. Professor Naismith.

9.—PHYSICAL EDUCATION. Three hours, 2d term, Monday, Wednesday, and Friday, at 9. Dealing with the effects of exercise on the various systems of the body; history of the subject; prescription of exercise, and mechanical therapeutics. Professor Naismith.

10.—PHYSICAL DIAGNOSIS. Two hours, 2d term, Tuesday and Thursday, at 9. Medical, physical and functional examinations; anthropometry and its applications. Professor Naismith.

11.—PHYSICAL EDUCATION OF CHILDREN. Three hours, 2d term, Monday, Wednesday, and Friday, at 8. Including the growth of the child and conditions that affect its development; effect of physical, mental and emotional strain. Relation of physical condition to the development of character and mental ability; methods of obtaining the best results. Professor Naismith.

12.—DEVELOPMENT OF SCHOOL CHILDREN. Two hours, 2d term, Tuesday and Thursday, at 8. Study of the normal periods of adolescence; the development of the nerve centers; tendencies to abnormalities; signs of incipient illness; signs of fatigue and strain; the examination of children for hindrances to study and development. Professor Naismith.

PHYSICS.

Professor HILL.

Associate Professor M. E. RICE.

Assistant Professor STIMPSON.

EQUIPMENT.—For lecture purposes there is a large lecture-room supplied with water, gas, and both direct and alternating currents. The apparatus available is sufficient to illustrate all the ordinary experiments usually given in a year's course in college physics and to show some of the more advanced experiments. There are three large general laboratory rooms and seven smaller rooms for special work, each supplied with water, gas, and several electrical power circuits. The apparatus for general physics is sufficient to enable each student to perform all the experiments usually described in manuals of college physics. For advanced work the equipment includes a number of pieces of fine apparatus in heat, light, and electricity; and there is regularly employed a mechanic, who is constantly making auxiliary apparatus and occasionally more complicated special pieces. The entire equipment is being increased as rapidly as possible. The department library contains the more important English, French and German periodicals, with bound volumes for twenty or thirty years. These include the *Philosophical Transactions* of the Royal Society, the *Philosophical Magazine*, the *Journal de Physique*, Drude's *Annalen und Beiblätter*, *Science Abstracts*, *Sections A and B*, and a number of others. There is also included a goodly number of standard treatises, elementary and advanced, as well as the collected papers of Maxwell, Faraday, Kelvin, and other prominent physicists.

ADVICE AS TO CHOICE OF COURSES.—Courses 1, 2, 3 and 4 are general courses, one or the other combination being prerequisite to the pursual of more advanced subjects; 7, 8, 10 and 11 are major courses, intended to follow those just named, and may be taken by either graduates or undergraduates; 12, 13, 14 and 15 are intended to form a cycle running through two years. A knowledge of differential equations will be necessary for these courses.

1.—**PROPERTIES OF MATTER, HEAT, AND SOUND.** Five hours, 1st term. Lectures and recitations, Monday, Wednesday, and Friday, at 9, and two two-hour laboratory periods per week, Monday and Wednesday, from 3 to 5, or Tuesday and Thursday, from 8 to 10. Open to students of the College and the Medical School. This course is descriptive and experimental, and is intended for those who desire a knowledge of the subject but who do not expect to make technical application of it, and who may have had no previous instruction in the branch. Assistant Professor Stimpson.

2.—LIGHT, ELECTRICITY, AND MAGNETISM. Five hours, 2d term. A continuation of 1, with the same schedule. Assistant Professor Stimpson.

3.—GENERAL PHYSICS. Five hours, 1st term, Monday, Tuesday, Wednesday, and Thursday, at 10:20 and 11:20, and one two-hour laboratory period. A fundamental course of experimental lectures and recitations. Open to all students who have had plane trigonometry and analytic geometry. Professor Hill and Associate Professor M. E. Rice.

4.—GENERAL PHYSICS. Five hours, 2d term, Monday, Tuesday, Wednesday, and Thursday, at 10:20 and 11:20, and one two-hour laboratory period. This is a continuation of 3, with the same requirements. Professor Hill and Associate Professor M. E. Rice.

5.—ELEMENTARY PHYSICS. Two hours' recitation and six hours' laboratory per week, throughout the second term. This course is intended primarily for students entering the School of Pharmacy, but may be taken by others who wish to make up an entrance condition. No university credit will be given for this course. Professor Hill.

6.—ELEMENTARY ACOUSTICS, FOR STUDENTS OF MUSIC. Tuesday and Thursday, at 10:20, for one-half of the second term. College students taking this course may receive one hour credit. The course is given in the spring of 1907 and will be offered in alternate years. Professor Hill.

FOR ADVANCED UNDERGRADUATES AND GRADUATES.

7.—THEORY OF ELECTRICITY AND MAGNETISM. Five hours, 1st term, Monday, Tuesday, Wednesday, Thursday, and Friday, at 10:20. Prerequisites: 1 and 2 or 3 and 4, and a ready working knowledge of the calculus. Open to Juniors, Seniors, and Graduates. Professor Hill.

8.—ELECTRICAL MEASUREMENTS. Six hours per week, 1st term, by appointment. This is a laboratory course, coordinate with 7, and with the same prerequisites. Open to Juniors, Seniors, and Graduates. Associate Professor M. E. Rice.

9.—HIGH-FREQUENCY OSCILLATORY CURRENTS AND THE PRINCIPLES OF THE WIRELESS TELEGRAPH. Open to students who have had 7 and 8. Associate Professor M. E. Rice.

10.—OPTICS. Recitations and laboratory work. Five hours, for one term, by appointment. Open to students who have had 1 and 2 or 3 and 4, and who have a working knowledge of the calculus. Associate Professor M. E. Rice.

11.—THEORY OF HEAT. Recitations and laboratory work. Three hours, for one term, by appointment. This course is descriptive rather than mathematical, though some use will be made of plane trigonometry, analytic geometry, and calculus. Special attention will be given to the study of energy relations and to delicate heat measurements and the measurement of high temperatures. Open to students who have had 1 and 2 or 3 and 4. Professor Hill.

12.—THE MATHEMATICAL THEORY OF SOUND. Lectures. Five hours, for one term, by appointment. Professor Hill or Associate Professor M. E. Rice.

13.—THE MATHEMATICAL THEORY OF HEAT. Lectures. Five hours, for one term, by appointment. Professor Hill or Associate Professor M. E. Rice.

14.—THE MATHEMATICAL THEORY OF LIGHT. Lectures. Five hours, for one term, by appointment. Professor Hill or Associate Professor M. E. Rice.

15.—THE MATHEMATICAL THEORY OF ELECTRICITY AND MAGNETISM. Lectures. Five hours, for one term, by appointment. Professor Hill or Associate Professor M. E. Rice.

PHYSIOLOGY.

Professor HYDE.

Demonstrator ———

EQUIPMENT.—The physiological department is thoroughly equipped with approved, modern apparatus for demonstration and experimental work. Besides a large lecture-room that seats 100 students, it possesses a department library for the use of the students, which contains the latest reference books and all of the best physiological journals. There is a large laboratory for the students of the College that contains tables particularly designed for their work. In this laboratory are, besides the needed instruments, digesters, spirometers, kymographs, manometers, and all kinds of electrical apparatus, a skeleton, and a finest French manikin. The research-room is fitted up with necessary tables, instruments and electrical apparatus for any kind of physiological experiments. There is also a large preparation room, where most of the material is prepared, and a storeroom.

ADVICE AS TO CHOICE OF COURSES.—Course 1 is recommended especially to general students and to those who intend to specialize in domestic science. Course 2 is designed for students who are preparing to teach.

1.—PHYSIOLOGY. Five hours, 1st term (a), daily, at 1:30. A

general course, especially designed to be introductory to the more advanced work in domestic science. The first half of the course is devoted to a study of the structure and functions of the human body, by means of lectures, recitations, demonstrations, and laboratory experiments. Laboratory fee, seventy-five cents. The second half consists of the study of the elements of hygiene and applied therapeutics, with special reference to home life. Open to Sophomores. Professor Hyde.

2.—PHYSIOLOGY. Five hours, 2d term, three days, at 11:15; two days, at 10:15. Lectures, demonstrations, and laboratory work. Laboratory fee, one dollar. A general course in physiology, designed for those who intend to specialize in the sciences. Open to students of the College who have taken chemistry 1. Professor Hyde.

3.—PHYSIOLOGY. Investigation of special subjects. Open to Juniors and Seniors who have completed physiology 2. Five hours, either term or both, by appointment. Professor Hyde.

FOR ADVANCED UNDERGRADUATES AND GRADUATES.

6.—PHYSIOLOGY. Experimental physiology and original research. Open to Juniors, Seniors and Graduates who have taken not less than a year of anatomy and physiology and have given evidence that they are prepared for it. Five hours, either term or both, by appointment. Professor Hyde.

FOR GRADUATES ONLY.

7.—PHYSIOLOGY. Advanced experimental physiology. Open to graduates who have taken not less than a year of anatomy and have given evidence that they are prepared for it. Recitations and lectures, with demonstrations, conferences and journal club, and laboratory experimental work. Ten hours, 1st term (b), 8 to 12:15; 2d term, 8 to 11:15. Professor Hyde.

PSYCHOLOGY. (See Philosophy.)

PUBLIC SPEAKING AND DEBATE.

Associate Professor FRAZIER.
Mr. _____

EQUIPMENT.—Students in this department will find in the library the collected orations of the leading American orators from the early colonial period to the present time, all of the better-known English orators, and specimens of the oratory of Greece, Rome, and modern France and Germany. In addition, there is a representative list of the early and the more recent writers who deal with the theory of oratory. The students in debate have access to

the economic, history and sociology seminary rooms in Spooner Library.

ADVICE AS TO CHOICE OF COURSES.—Work in this department is arranged to meet the needs of two classes of students: (1) Those who wish merely a preliminary training in the practice of public speaking and the principles of reading; and (2) those who desire to specialize to some extent in these subjects as preparation for professional life. The students of the first class should elect courses 1 and 2 during the Freshman or Sophomore years, and, if possible, course either 7 or 8 during the Junior or Senior years. The students of the second class should elect their courses in catalogue order, and consult with the instructor as to collateral courses to be pursued. All students contemplating taking work in this department are urged to join one of the literary societies of the University and to participate in the University debates, as supplementary to the classroom work.

Members of the University debating teams desiring credit for the work done in preparation should register for course 2 or 4—Freshmen and Sophomores for the former, Juniors and Seniors for the latter.

FOR UNDERGRADUATES ONLY.

1.—**PRINCIPLES OF SPOKEN DISCOURSE.** Three hours, both terms, Monday, Wednesday, and Friday, at 8, 9, and 10:15. Open to all students of the College. A course designed to be introductory and preparatory, rather than technical. Training in the theory of oratory, in the analysis and delivery of famous speeches, and in the construction and oral presentation of original speeches; drill in speaking from outline and in the use of manuscript. Lectures and required library reading. The enrolment in any section of this course is limited to twelve students. Associate Professor Frazier and Mr. ———.

2.—**ARGUMENTS AND DEBATES.** Two hours, both terms, Tuesday and Thursday, at 8, 9, and 10:15. Lectures and recitations on the principles of argumentation as applied to oral discussion. The work will consist of regular classroom debates conducted by affirmative and negative debating teams. The more simple questions will be chosen. Each side will submit its brief and write a forensic covering the argument of each debate. Should be preceded by course 1, although this is not necessary. Associate Professor Frazier and Mr. ———.

3.—**ORAL DEBATES.** Three hours, 1st term, Monday, Wednesday, and Friday, at 11:15. The object of this course is to give the student a more advanced training in debate. The fundamental

principles of debating will be discussed in detail; lectures will be given on the collecting and arranging of material. There will be weekly debates by the members of the class. Open to Juniors and Seniors who have had public speaking 2 or rhetoric 5 and 6. Associate Professor Frazier.

4.—ORAL DEBATES. Two hours, 2d term, Tuesday and Thursday, at 4:30. Advanced course. A thorough investigation of a limited number of subjects taken from the field of political economy, sociology, and history. Conferences, classroom discussion, and criticism. Open to Juniors and Seniors who have had public speaking 3. Associate Professor Frazier and Mr. ———.

5.—EXPOSITORY ADDRESSES. Two hours, 2d term, Tuesday and Thursday, at 11:15. A study of the form and requirements of the expository address. The subject-matter for the speeches in this course will be chosen from subjects in which the student has some settled interest. Open to Juniors and Seniors who have had public speaking 1. Associate Professor Frazier.

6.—READING ALOUD. Two hours, 1st term, Tuesday and Thursday, at 11:15. The aim of this course is to give the student suggestions and helps which will enable him to read aloud intelligently, simply, and with appreciation. There will be lectures and classroom drill. Associate Professor Frazier.

7.—FORMS OF PUBLIC ADDRESS. Three hours, 1st term, Monday, Wednesday, and Friday, at 11:15. The study and practice of the forms of demonstrative oratory—the eulogy, the after-dinner speech, political oratory, anniversary and commemorative addresses, nominating speeches, responses, and platform addresses. Library work covering the literature of the subject. Associate Professor Frazier.

8.—EXTEMPORE SPEAKING. Two hours, 2d term, Tuesday and Thursday, at 10:15. The object of this course is to train the student to think and to speak on his feet. Special attention will be given, in the first place, to the construction of the speech, to the gathering and outlining of the material; and, in the second place, to the natural and effective delivery of the material thus arranged. Associate Professor Frazier.

ROMANCE LANGUAGES AND LITERATURES.

Professor GALLOO.

Associate Professor BASSETT.

Assistant Professor LE DUC.

Assistant Professor NEUEN SCHWANDER.

Assistant Professor SCHOCH.

Miss BENN, Fellow.

EQUIPMENT.—The department of Romance languages and literatures possesses a collection of illustrative material consisting of several hundred photographs, stereopticon slides, maps, plans, plaster casts, etc., representing historical features of French life, in costume, architecture, etc., as well as persons, places and things that have a closer and more definite relation to literature or to special literary works. The library of this department contains 3042 volumes, and receives ten French and two Spanish periodicals.

French.

ADVICE AS TO CHOICE OF COURSES.—The first five courses must be taken in the order indicated below.

Of the following courses, 6-10, students are required to elect at least three (which must include 8 and 9) before they can be admitted to any of the advanced courses.

The literature courses should, as far as possible, be taken in the catalogue order. It is recommended that they be accompanied by corresponding courses in mediæval or modern European history.

In order to take up the linguistic study of any of the Romance languages, it is essential that students be well-grounded in Latin. They should also have a reading knowledge of German.

Graduate work in this department presupposes acquaintance with elementary Spanish and Italian.

The head of the department will, on application, outline a course for students intending to specialize in, or teach, French.

FOR UNDERGRADUATES ONLY.

1.—**ELEMENTARY FRENCH I.** Grammar (Fraser and Squair) and easy reading. Five hours, 1st term, daily, at 8, 9, 10:15, 11:15, or 1:30; also given in the 2d term, five hours, daily, at 11. Drill in pronunciation and forms. Open to all students who have had three years of Latin or three years of German. Professor Galloo, Assistant Professor Le Duc, Assistant Professor Neuen Schwander, or Assistant Professor Schoch.

2.—**ELEMENTARY FRENCH II.** Five hours, 2d term, daily, at 8, 9, 10:15, 11:15, or 1:30; also given in the 1st term, five hours, daily, at 8. A continuation of course 1. Reading of simple prose texts, with exercises in dictation and elementary composition.

Professor Galloo, Assistant Professor Le Duc, Assistant Professor Neuen Schwander, or Assistant Professor Schoch.

3.—MODERN FRENCH PROSE. Three hours, both terms—1st term, Monday, Wednesday, and Friday, at 9; 2d term, Monday, Wednesday, and Friday, at 8. Translation and reading of some works of Mérimée, George Sand, Anatole France, and René Bazin. Assistant Professor Le Duc or Assistant Professor Neuen Schwander.

4.—COMPOSITION. Two hours, both terms, Tuesday and Thursday—1st term, at 9; 2d term, at 8. Written exercises intended chiefly as a grammatical review. Oral exercises. Dictation. May be taken in conjunction with course 3 or course 5. Assistant Professor Le Duc or Assistant Professor Neuen Schwander.

5.—FRENCH PROSE AND POETRY. Three hours, both terms, Monday, Wednesday, and Friday, at 10:15. Reading of representative works of the seventeenth, eighteenth and nineteenth centuries. Assistant Professor Le Duc or Assistant Professor Neuen Schwander.

6.—COMPOSITION. Two hours, 2d term, Tuesday and Thursday, at 10:15. A continuation of course 4, intended to provide additional practice in writing and speaking French. Assistant Professor Le Duc.

7.—CORNEILLE AND RACINE. Two hours, 2d term, Tuesday and Thursday, at 9. Reading of four or five of the greatest tragedies of each poet. Must be preceded by courses 4 and 5. Assistant Professor Le Duc.

8.—MOLIÈRE. Three hours, 1st term, Monday, Wednesday, and Friday, at 11:15. Careful study of the more important plays, rapid reading of the others; reports in French by members of the class. Professor Galloo.

9.—COMPOSITION AND CONVERSATION. Two hours, 1st term, Tuesday and Thursday, at 11:15. Practice in writing and speaking French. Professor Galloo.

10.—ADVANCED COMPOSITION. Two hours, 2d term, Tuesday and Thursday, at 11:15. Translation, original composition, and practice in speaking French. Must be preceded by course 9. Professor Galloo.

FOR ADVANCED UNDERGRADUATES AND GRADUATES.

11.—HISTORY OF EARLY FRENCH LITERATURE. Three hours, 1st term, Monday, Wednesday, and Friday, at 9. From the earliest times to the classic period. Lectures, recitations, and private readings. Professor Galloo.

12.—HISTORY OF MODERN FRENCH LITERATURE. Three hours, 2d term, Monday, Wednesday, and Friday, at 9. From the classic period to the present day. Lectures, recitations, and private readings. Professor Galloo.

13.—TEACHERS' COURSE. Three hours, 2d term, Monday, Wednesday, and Friday, at 11:15. Systematic review of the grammar from the point of view of the requirements of elementary instruction. Outlines of historical grammar. Study of methods of teaching languages, and practice in teaching. Open only to students who give evidence of fitness for the work. Professor Galloo.

14.—FRENCH LITERATURE OF THE SIXTEENTH CENTURY. Two hours, 2d term, by appointment. The renaissance in French literature. The *Pléiade*. The beginnings of French classicism. Professor Galloo.

15.—FRENCH LITERATURE OF THE SEVENTEENTH CENTURY. Two hours, 2d term, by appointment. A study of the development of French literature from the renaissance to the end of the reign of Louis XIV. Assistant Professor Le Duc.

16.—FRENCH LITERATURE OF THE EIGHTEENTH CENTURY. Two hours, 2d term, by appointment. Special attention is paid to the life and works of Voltaire; study of Montesquieu, Rousseau, and the encyclopedists; the dramatists. Assistant Professor Neuen Schwander.

17.—THE ROMANTIC SCHOOL (1800-1835). Three hours, 1st term, Monday, Wednesday, and Friday, at 9. A study of the rise of romanticism in France and of its characteristic products in poetry and the drama. Lamartine, A. de Vigny, and A. de Musset. Professor Galloo.

18.—THE ROMANTIC SCHOOL (1880-1835). Two hours, 2d term, Tuesday and Thursday, at 9. This is a continuation of course 14, and will be devoted especially to Victor Hugo's works. Professor Galloo.

19.—DEVELOPMENT OF THE FRENCH NOVEL. Two hours, 1st term, Tuesday and Thursday, at 9. A survey of the novel in the seventeenth and eighteenth centuries. Professor Galloo.

20.—DEVELOPMENT OF THE FRENCH NOVEL. Three hours, 2d term, Monday, Wednesday, and Friday, at 9. The novel in the nineteenth century, with special reference to the origin and growth of realism and naturalism. Professor Galloo.

21.—THE FRENCH DRAMA. Three hours, 2d term, Monday, Wednesday, and Friday, at 1:30. A study of the development of the theater in France from the origin to the period of Augier and Du-

mas fils. Lectures, recitations, and written reports. Assistant Professor Le Duc.

22.—HISTORY OF THE FRENCH LANGUAGE. Three hours, 1st term, by appointment. Its rise from low Latin; the additions from other sources; its growth and modifications. Professor Galloo.

23.—OLD FRENCH. Two hours, 2d term, by appointment. An introduction to French philology. *Chrestomathie du moyen âge* (Paris et Langlois) or *Chrestomathie de l'ancien français* (Constans). Professor Galloo.

24.—OLD FRENCH. Two hours, 1st term, by appointment. A continuation of course 22. Reading of the *Extraits de la Chanson de Roland* (Gaston Paris), with special attention to the phonetic changes and the inflections. Professor Galloo.

FOR GRADUATES ONLY.

25.—OLD FRENCH. Three hours, 1st term. Phonology and morphology of old French, with some discussion of syntax. *Le Pèlerinage de Charlemagne à Jérusalem; Aucassin et Nicolette*. Must be preceded by courses 23 and 24 or their equivalents. Professor Galloo.

26.—PROVENÇAL. Two hours, 1st term, by appointment. Grandgent's Provençal Phonology and Morphology and Bartsch's *Chrestomathie Provençale*. Assistant Professor Schoch.

27.—MEDIEVAL FRENCH LITERATURE. Three hours, 2d term, by appointment. From the first literary monuments to the renaissance. Professor Galloo.

28.—MOLIÈRE. Three hours, 1st term, by appointment. Same course as 8, with additional requirements. Study of Molière; his life and surroundings; his plays—their sources and influence. One or more essays will be written, preferably in French. Professor Galloo.

Spanish.

Students are advised to take, as preparation, courses 1 and 2 in French.

FOR UNDERGRADUATES ONLY.

1.—ELEMENTARY SPANISH I. Five hours, 1st term, daily, at 9 or 10:15; also given in the 2d term, at 2:30. An outline of grammar (Hills and Ford). Reading of short stories. Elementary composition. Associate Professor Bassett or Assistant Professor Schoch.

2.—ELEMENTARY SPANISH II. Five hours, 2d term, daily, at 9 or 10:15; also given in first term, at 2:30. Grammar and composition. Reading of easy modern prose: Carrión-Aza, Pérez

Galdós, Palacio Valdés, Emilia Pardo Bazán. Associate Professor Bassett or Assistant Professor Schoch.

3. MODERN SPANISH. Three hours, 1st term, Monday, Wednesday, and Friday, at 1:30. Some notable writers of the nineteenth century: Alarcón (Cosas que fueron), Caballero (La Gaviota), Pereda (Sotileza), Valera (Doña Luz), Núñez de Arce (El Haz de Leña). Associate Professor Bassett.

4.—COMPOSITION. Two hours, first term, Tuesday and Thursday, at 1:30. Systematic practice in speaking and writing Spanish, based on Ramsey's *Lo Esencial del Lenguaje castellano*, and Ramsey's Spanish Grammar (selected lessons); Ford's Exercises for Spanish Composition (or corresponding material). Must be preceded by course 2 or its equivalent, and may be taken to supplement course 3. Associate Professor Bassett.

5.—ADVANCED COMPOSITION. Two hours, 2d term, Tuesday and Thursday, at 2:30. A continuation of course 4, by which it should be preceded. It may be taken to supplement course 6. Associate Professor Bassett.

FOR ADVANCED UNDERGRADUATES AND GRADUATES.

6.—CERVANTES. Three hours, 2d term, Monday, Wednesday, and Friday, at 2:30. Study of Don Quixote, part I. Themes and special reports. Associate Professor Bassett.

7.—PICARON SATIRE AND THE NOVELA. Three hours, 1st term, by appointment. *Lazarillo de Tormes*, Alemán, Cervantes (selections from the *Novelas ejemplares*), Quevedo, etc. Spanish society in the sixteenth and seventeenth centuries. Associate Professor Bassett.

8.—THE CLASSICAL DRAMA. Three hours, 2d term, by appointment. Selected plays of Lope de Vega and Calderón. The evolution of the Spanish drama.

Italian.

Students are advised to take, as preparation, courses 1 and 2 in French.

FOR UNDERGRADUATES ONLY.

1.—ELEMENTARY ITALIAN. Three hours, 1st term, Monday, Wednesday, and Friday, at 1:30. Grammar. Reading, De Amicis's *Cuore*. Assistant Professor Schoch.

2.—Continuation of course 1. Three hours, 2d term, Monday, Wednesday, and Friday, at 1:30. Grammar, composition, and reading of modern authors. Assistant Professor Schoch.

3.—GRAMMAR AND READING. Two hours, 1st term, Tuesday

and Thursday, at 1:30. This course may be taken in connection with course 1. Assistant Professor Schoch.

4.—WRITERS OF THE CINQUECENTO. Two hours, 2d term, Tuesday and Thursday, at 1:30. Must be preceded by course 3. Assistant Professor Schoch.

FOR ADVANCED UNDERGRADUATES AND GRADUATES.

5.—DANTE. Three hours, by appointment, 1st term. The *Divina Commedia*; its relation to the age, and its importance in the history of the Italian language and literature. For 1907-'08, *Il Inferno* (Scartazzini). Assistant Professor Schoch.

SANSKRIT.

(See Latin Language and Literature.)

SPANISH.

(See Romance Languages and Literatures.)

SOCIOLOGY AND ECONOMICS.

Professor BLACKMAR.
Associate Professor CONE.
Assistant Professor BOYNTON.
Mr. NYQUIST, Fellow.

EQUIPMENT.—Instruction in the department of sociology and economics is conducted chiefly by lectures, and reading and investigation in the library, aided in certain courses by text-books. The University library contains about 3000 volumes relating to the courses of instruction. All of the principal magazines treating of the work of the department are on file in the reading-room for the use of the students. In addition there are charts, maps, and outlines. A limited amount of investigation of social conditions is carried on.

ADVICE AS TO CHOICE OF COURSES.—Courses 1, 2, 3 and 4 lay the foundation of subsequent work in sociology, although it is possible for students who have studied either economics or history to take courses 5, 6, and 7. Courses 1, 2, 3 and 4 are designed to give a general knowledge of the subjects treated. Courses 5, 6 and 7 are for advanced work and are especially designed for those who desire to specialize in sociology.

Courses 8 and 9 are designed for a general survey of anthropology. They are general culture studies but also relate to other courses of sociology.

Economics 1 is an essential foundation to subsequent courses in economics. Economics 2 and 3 lay the foundation for economics 9,

10, 11, and 12. It is very desirable that students should consult with the instructors before choosing a group of studies in the department of sociology and economics, as there are five more or less distinct lines of work, namely, sociology proper, ethnology, economic theory, economic history, and statistics and finance.

Sociology.

Courses 1 to 11, inclusive, are open to Juniors and Seniors of the College. These courses may also be taken by graduate students, with such additional work as may be required by the instructor.

FOR ADVANCED UNDERGRADUATES AND GRADUATES.

1.—ELEMENTS OF SOCIOLOGY. Three hours, 1st term, Monday, Wednesday, and Friday, at 1:30. This is a general course in the foundations and principles of sociology. It includes the careful survey of social origins, social evolution, social structure, social activities, and social organization. It is a study of the nature of society in its concrete forms from an evolutionary standpoint, and of the operation of social forces and social laws. Much attention is given to the causes which have produced society. A concrete study of a community is required of each student. Professor Blackmar.

2.—APPLIED SOCIOLOGY. Two hours, 2d term, Tuesday and Thursday, at 1:30. In this course special attention is given to social ideals, social aims, and social achievements, the conditions and modes of social progress, and the subject of conscious social activity, social environment, the causes and effects of inequalities, the equalization of opportunities, and the advancement of justice; some phases of social ethics. Professor Blackmar.

3.—SOCIAL PATHOLOGY. Two hours, first term, Tuesday and Thursday, at 1:30. A general study of poverty, pauperism, crime, and social degeneracy, and their causes, prevention, and remedy; a study of the causes of epilepsy and insanity. Professor Blackmar.

4.—REMEDIAL AND CORRECTIVE AGENCIES. Three hours, 2d term, Monday, Wednesday, and Friday, at 1:30. Administration of charitable and correctional affairs; management of jails, reformatories, penitentiaries, and institutions for defectives and dependents; conditions of the slums and rural populations; housing of the poor; defects of social organization; methods of prevention of social degeneration; social sanitation. Each student is required to visit at least two social institutions and report on the same. Professor Blackmar.

5.—SOCIALIZATION AND SOCIAL CONTROL. Three hours, 1st term, Monday, Wednesday, and Friday, at 2:30. This course is designed to give a thorough study in pure sociology. It has to do

with social forces, social laws, and the origin and development of social control. It involves a study of aggregation, association, and cooperation, as well as social inequalities and methods of overcoming their evil effects. Professor Blackmar.

6.—PSYCHOLOGICAL SOCIOLOGY. Three hours, 2d term, Monday, Wednesday, and Friday, at 2:30. Origin, development and characteristics of the social mind; psychical activities; psychology of the crowd and the "mob"; psychology of political and social institutions. Professor Blackmar.

7.—SOCIAL AND ECONOMIC STATISTICS. Two hours, 2d term, Tuesday and Thursday, at 10:15. A practical course in social relation and social problems by the statistical method. Students are instructed in the technique of statistics and the scope and meaning of statistical inquiry. A practical knowledge is derived from the handling of statistical data and in the construction of statistical tables, tabulations, etc. By the preparation of diagrams, charts, etc., in the laboratory, the graphic method is also introduced. It is aimed to make the course a practical one by the study of such sociological phenomena as populations, vital statistics, birth-rates, marriage-rates, death-rates, divorce, immigration, migration, etc., and in the investigation of such economic subjects as prices, trade and internal commerce, agricultural and manufacturing growth, and such industrial activities as admit of statistical inquiry. Some knowledge of economics and sociology is desirable. (Alternates with economics 19.) Assistant Professor Boynton.

8.—GENERAL ANTHROPOLOGY. Three hours, 1st term, Monday, Wednesday, and Friday, at 3:30. The natural history of man. The probable origin and antiquity of man. Comparison with the anthropoid apes. Man's physical, mental and social characteristics. Methods of obtaining food, shelter and distribution over the earth. Evidences of Tertiary man. Relics of man found in the gravel drift, caves, and mounds. The beginnings of art and industry. The division of labor. The origin and development of language. Lectures and library work. (Not given in 1907.) Professor Blackmar.

9.—ETHNOLOGY. Two hours, 2d term, Tuesday and Thursday, at 3:30. Origin of races and ethnic groups. Racial differentiation and development. Characteristics of ethnic society. Why some ethnic groups survive and others become extinct. The conflict and survival of races. Their geographical distribution. Influence of geographical and physical environment. Comparison of natural and civilized races. Classification of existing races. Modern race

problems. Lectures and library work. (Not given in 1908.) Professor Blackmar.

10.—THE FAMILY. Two hours, 2d term, Tuesday and Thursday, at 2:30. The origin and growth of the family historically considered. The family as the unit of society. The relation of husband and wife and of parents and children. The economic basis of family life. The psychology of family life. The family as the type of society. Its importance in the preservation of society. The pathology of the family. The relation of the family to the general social organism, politically, religiously, and socially. Professor Blackmar.

11.—SOCIALISM. Two hours, 1st term, Tuesday and Thursday, at 2:30. The development of modern socialistic theories, including a study of French and German socialism. Modern socialistic tendencies and their causes. The development of social democracy. The limitations of industrial liberty. Government control and government ownership of industries. Professor Blackmar.

FOR GRADUATES ONLY.

12.—AMERICAN AND EUROPEAN CHARITIES. Five hours, by appointment. Research course. A study of charities administration in the United States and some of the principal cities of Europe. Personal investigation of American charitable institutions with special reference to methods of state control. Professor Blackmar.

13.—AMERICAN ETHNOLOGY. Three hours, by appointment. Research course in the natural races of America. Migration and geographical distribution of tribes. Comparative characteristics of tribes and ethnic groups. Government and organization of tribes. The beginnings of civilization, the food-supply, and the progress in the industrial arts. Professor Blackmar. (Not given in 1907-'08.)

14.—PREPARATION FOR PUBLIC SERVICE. Three hours, 2d term, by appointment, Monday, Wednesday, and Friday. A study of the administration of charitable and penal institutions. The business administration of public affairs. Preparation for civil service. A research course in the library supplemented by the investigation of institutions by visitation. Lectures by experienced officials on institutional administration and practical politics. For advanced students who desire to prepare for public service. Professor Blackmar.

Economics.

Courses 1 to 3, inclusive, are open to all students of the College. Courses 4 to 21 are for Juniors and Seniors, but may be taken also by Graduates, with the addition of such extra work as may be required by the instructor.

FOR UNDERGRADUATES ONLY.

1.—ELEMENTS OF ECONOMICS. Five hours, daily, 1st term, at 3:30; repeated 2d term, at 3:30. This course endeavors to develop and explain the general laws of man's activity in the production, distribution and consumption of wealth. It serves, therefore, as the basis for a scientific understanding of industrial actions and relations, and as an aid to getting the fullest benefit from the following courses. Some of the main topics studied are: The nature and influence of economic wants; the nature and cause of value; the factors of production and their organization; the influences determining the shares of product distributed as rent, wages, interest, and profits. Associate Professor Cone.

2.—ECONOMIC HISTORY OF ENGLAND. Three hours, 1st term, Monday, Wednesday, and Friday, at 9. The object of this course is to trace and explain the general development of agriculture, industry and commerce in England. The period covered extends from the Saxon invasion to the present time, and special attention is given to early agriculture, early town life, merchant and craft guilds and other corporate privileges, and the rise of commerce, trade routes, markets, and fairs. Special industries and their effect on English life are traced. The agrarian revolution, the peasant's revolt, enclosures; the national policy in industry and trade, the mercantile system and its effect on English commerce, the great inventions of the eighteenth century, and the causes and nature of the industrial revolution, together with certain aspects of the English industrial supremacy of the past century, form the concluding features of the course. Assistant Professor Boynton.

3.—ECONOMIC HISTORY OF THE UNITED STATES. Three hours, 2d term, Monday, Wednesday and Friday, at 9. The study of the economic development of the United States from the earliest colonial times down to the present is undertaken in this course. Attention is given to colonial agriculture, industry, and trade. The effect upon American life of the westward expansion, the economic significance of slavery in the South and in the country at large, the industrial development of the North prior to the civil war, and such important subjects as the history of the tariff, monetary legislation, the causes and effects of commercial crises, the development of railway transportation, the resources of the nation and the rise and importance of American manufactures will receive due attention. Finally, a survey will be made of the present industrial situation under corporate methods and of the outlook for democratic control of industrial conditions. Should be preceded by course 2. Assistant Professor Boynton.

FOR UNDERGRADUATES AND GRADUATES.

4.—**MONEY AND CREDIT.** Two hours, 1st term, Tuesday and Thursday, at 1:30. Training in economic reasoning and a systematic knowledge of the fundamental principles of currency in its various forms are the chief aims of this course. The principal forms of money and of credit, as developed in the experience of the principal countries, and as at present in use in various parts of the world, are studied. Must be preceded or accompanied by course 1. Associate Professor Cone.

5.—**BANKING.** Two hours, 2d term, Tuesday and Thursday, at 1:30. The principles of banking, and banking institutions, as the chief sources of credit in a readily usable form, are studied, both as to the principal historical steps in their development and as to their present forms and methods in different countries. The banking systems of the United States receive especial attention, including the suggestions for reform of the present organizations. Must be preceded by course 4. Associate Professor Cone.

6.—**FINANCIAL HISTORY OF THE UNITED STATES.** Three hours, 2d term, Monday, Wednesday, and Friday, at 2:30. This course will give a consecutive view of the experience of this country in providing mediums of exchange, in providing sources of government revenue, and in caring for and using the revenue. The laws of the United States in regard to currency, banking, public revenue, expenditure, and debt, the methods of administering those laws, and the resultant conditions, will be examined. The variety of this experience will furnish illustrations of the principles studied in courses 4, 5, and 7. Must be preceded or accompanied by course 1. Associate Professor Cone.

7.—**PUBLIC FINANCE.** Three hours, 1st term, Monday, Wednesday, and Friday, at 2:30. The theory of government expenditure is studied, illustrated by some reference to the experience of various governments. The different sources of government revenue are examined, taxation receiving chief attention. The creation, management, refunding and extinguishment of public debt are discussed. Must be preceded by course 1. Associate Professor Cone.

8.—**CORPORATE FINANCE.** Two hours, 1st term, Tuesday and Thursday, at 2:30. The financial side of large business operations, as met with chiefly in corporations, is studied. Some of the topics considered are: The nature, advantages and extent of the corporate form of organization; the nature and relations of stocks and bonds in different forms; the methods pursued in marketing securities; the causes of stock-watering; the character and causes of

recently revealed corporate corruption. All are examined with a view to giving a better understanding of frequently misunderstood corporate actions. Must be preceded by course 1. Associate Professor Cone.

9.—HISTORY OF COMMERCE AND COMMERCIAL GEOGRAPHY. Three hours, 1st term, Monday, Wednesday, and Friday, at 10:15. A brief survey is made of the commerce and trade routes of the ancient peoples surrounding the Mediterranean sea, of the effect of the crusades and of the stimulus given to mediæval commerce by the Italian cities and the Hanseatic League, the position of the trader and the merchant, together with the commodities of early commerce; the restrictions, monopolies, trading companies and national policies with reference to trade are also discussed. The effects on Europe of the period of discovery and colonization are also traced. The development of the commerce of the separate nations is concluded to the present time, the policies they have pursued in securing it, and the natural advantages each possesses in the competition of the world market. Considerable attention is devoted to the sources of raw materials, to the location of the demand and supply of finished products, and to the governmental activities to stimulate national prestige along commercial lines. Should be preceded by courses 1 to 3, inclusive. Assistant Professor Boynton.

10.—ECONOMIC RESOURCES AND ACTIVITIES OF EUROPEAN COUNTRIES. Two hours, 2d term, Tuesday and Thursday, at 9. The studies of the natural resources of industrial nations and their present economic life and activity will be the subject-matter of this course. The present condition of agriculture, mining, manufacturing, and industry in general, together with the internal trade and foreign commerce of each country, will be investigated and the governmental policies designed to encourage industry and trade will also be a feature of the course. Finally, the trade relations of these countries among themselves and with other nations and their competition for the markets of the world will conclude the investigation of the subject. Should be preceded by courses 1 to 3, inclusive, or course 9. (Alternates with economics 20.) Assistant Professor Boynton.

11.—HISTORY AND DEVELOPMENT OF TRANSPORTATION. Two hours, 1st term, Tuesday and Thursday, at 11:15. Primitive and improved methods of transportation are studied in their economic aspects. The historical development of the canal and the railway and their relation to each other and to society in this and other countries are traced. Special attention is given to this development in the United States. This course is designed as preparation, in

part, for course 12, and should be preceded by courses 1 to 3, inclusive, and course 9. Assistant Professor Boynton.

12.—RAILWAY RATES AND GOVERNMENT REGULATION. Three hours, 2d term, Monday, Wednesday, and Friday, at 11:15. This course involves a study of the theory of railway rates, competition in transportation, and the problems of local and individual discrimination. State interference, regulation and ownership receive attention. The experience of state railway commissions and the work of the Interstate Commerce Commission will be reviewed, and the efforts by recent legislation, state and national, to deal with the problems arising in connection with transportation will conclude the course. This course should be preceded by course 11. Assistant Professor Boynton.

13.—HISTORY OF TRADE-UNIONISM AND LABOR ORGANIZATION. Three hours, 1st term, Monday, Wednesday, and Friday, at 11:15. The growth and nature of labor organizations since the appearance of a distinct wage-earning class in society will be traced. Special consideration will be given to the growth of trade-unionism in England during the past 100 years, and to the more recent development of the labor movement in the United States, Germany, and Australasia. Methods of remuneration, viz., cooperation, profit-sharing, and the wages system, receive attention; likewise the teaching and bearing of economic theory on the question of wages and the laboring class. This course should be preceded by courses 1 to 3, inclusive. Assistant Professor Boynton.

14.—PRESENT LABOR PROBLEMS. Two hours, 2d term, Tuesday and Thursday, at 11:15. This course has to do with present-day problems connected with labor—the problems arising from the existence of a laboring class and an employing class. Their mutual relations and the natural difficulties arising between them are considered, and the effects of these relations and of the often conflicting interests, not only upon the two parties, but upon the public as well, will receive due attention. This course should be preceded by course 13. Assistant Professor Boynton.

15.—INSURANCE. Two hours, 2d term, Tuesday and Thursday, at 2:30. The general economic nature of risk is pointed out, risks are classified, and those falling in the insurable class are given especial attention. The different groups of insurance—marine, fire, life—and various newer extensions of the principles to other kinds of risks, are treated. The various forms of insurance organization, as stock companies, mutual and fraternal organizations, and various modifications of these, are considered. Must be preceded by course 1. Associate Professor Cone.

16.—ACCOUNTING. Two hours, 2d term, Tuesday and Thursday, at 2:30. The object of this course is to develop the economic principles underlying the so-called higher accounting, which aims to give at all times a true and complete, but condensed, representation of the real condition of the particular business to which it is applied. In order to succeed in this, it must be based upon the most careful economic analysis. Some typical illustrations, taken from the practice of large corporations, will be studied. This course is closely related to course 8. Must be preceded by course 1. Associate Professor Cone. (Not given in 1907-'08.)

17.—ECONOMIC THEORY, TO ADAM SMITH. Two hours, by appointment. The growth of thought about economic matters in ancient, mediæval and modern times, down to about the end of the eighteenth century, is studied, chiefly from the works of the original writers, although the histories and commentaries are not ignored. This study furnishes many points for suggestive contrast and comparison between earlier and later theories, and explains many otherwise incomprehensible features of modern economic theories. Must be preceded by course 1. Associate Professor Cone.

18.—ECONOMIC THEORY SINCE ADAM SMITH. Two hours, by appointment. The extensive and important economic literature of the nineteenth century is the subject-matter of this course. The important economists are all studied at first hand, and occasional attention is given to the works of minor writers, in cases where their writings contain important germs of theories later developed by others of greater prominence. This course serves not only to explain the growth of present views but also to give a fuller body of economic doctrine than can be given in course 1. Must be preceded by course 1. Associate Professor Cone.

19.—ECONOMICS OF AGRICULTURE. Two hours, 2d term, Tuesday and Thursday, at 10:15. A course in the economics of agriculture, with special reference to American conditions. Attention will be directed to the settlement of the public domain, to the policy of the government in securing this end, to the present efforts of the government in reclaiming waste areas by irrigation, and to the organized work and cooperation of the Department of Agriculture. The peculiar natural advantages of various sections and their opportunities for cheapened transportation, the statistics of crop production, together with the markets at home and abroad for agricultural products, and the competition encountered will be features of the course. The important subjects of land values, rents, and taxation, in their special bearing on agricultural lands, likewise

find a place in this course. (Not given in 1907-'08; alternates with sociology 7.) Assistant Professor Boynton.

20.—BUSINESS ORGANIZATION AND MANAGEMENT. Two hours, 2d term, Tuesday and Thursday, at 9. Alternates with economics 10, given in 1907-'08. Designed for advanced students in economics and sociology who desire to make special preparation for business life. The course treats of methods of general business organization and management as well as the organization of the business of the bank, the factory, and the general office. The organization and working of the industrial and commercial corporation will be given special consideration. Attention will be given to special examples of industries as types to illustrate the forms of modern business organizations and methods. The extractive, manufacturing and commercial forms of business activity will be investigated, together with their accompanying financial mechanism of exchange, credits, speculation, and the various devices created by the men of affairs for the effective prosecution of modern business. (Not given in 1907-'08.) Assistant Professor Boynton.

21.—SEMINAR OF SOCIOLOGY AND ECONOMICS. Two hours, each term, by appointment. This is a research course for advanced students. Applicants for admission to the seminar must satisfy the instructors of their preparation and ability to undertake original investigation. Each student must pursue a definite line of work under the direction of one of the instructors. Professor Blackmar, Associate Professor Cone, and Assistant Professor Boynton.

ZOOLOGY.

Professor McCLUNG.

Professor DYCHE.

Professor HUNTER.

Assistant Professor BAUMGARTNER.

Miss NOWLIN.

Mr. ROBERTSON.

Mr. CLARK, Fellow.

EQUIPMENT.—The department is in the possession of ample facilities in the way of specimens and apparatus for the presentation of the courses outlined below. The historical development of vertebrate life is made teachable by the large paleontological collection in the museum. Representative types of invertebrates from the Atlantic and Pacific coasts, as well as from Bermuda, make possible the thorough treatment of almost any of the lower orders. Histological, cytological and embryological material of great variety has been provided. Microscopes, microtomes and other apparatus necessary for even the most advanced work are at hand. The well-

equipped preparation rooms make instruction in the museum very thorough.

ADVICE CONCERNING CHOICE OF COURSES.—Course 1 is designed as an introduction to the subject, and, so far as possible, gives a general survey of the animal kingdom. The character of the work is such as to lay particular stress upon training in the independent observation and correlation of facts. It is, therefore, a course which may be taken by those who wish merely to gain a general idea of zoölogy and to become acquainted with the methods of scientific work. As an elementary course it forms a basis for any advanced work, and is required for entrance into the other courses, except 6. Taken with course 1 in botany, it completes a year's training in elementary biology.

Course 2 logically follows course 1, and should be taken by those who desire a more comprehensive view of the subject than can be gained in a half-year's study. While more advanced in character than the first course, it is not too technical for the general student. It should be taken by all wishing to continue in the more advanced courses.

Course 3 may be taken with advantage by students who have had course 1, or preferably 1 and 2, and who expect to teach zoölogy in the high school without making a specialty of the subject.

Course 4 is the last of the general courses, and completes the work of preparation desirable for students who wish to take up a detailed study of zoölogy in more or less limited fields. It may follow courses 1 and 2 in the case of students who choose to enter directly into systematic work.

Students contemplating the study of medicine are recommended to take not less than ten hours of work in zoölogy. Arrangements will be made to provide such students with as much comparative anatomy as possible. Consultation should be had with the head of the department, early in the course, for the purpose of arranging the work.

In all cases students are urged to secure during their Freshman and Sophomore years as much training as possible in physics, chemistry, botany, and the modern languages.

FOR UNDERGRADUATES.

1.—**ELEMENTARY ZOÖLOGY.** Five hours, 1st term, 1:30 to 3:30. A course in the general principles of zoölogy. The work consists of a laboratory study of type specimens, together with lectures upon classification, habits, distribution, etc. Open to all students of the College. Professor McClung, Assistant Professor Baumgartner, and Miss Nowlin.

2.—MORPHOLOGICAL ZOÖLOGY. Five hours, 2d term, 1:30 to 3:30. (a) A continuation of the work begun in course 1, pursued, however, in a more thorough and detailed way. In this division the lower invertebrates will be studied. Open to all students of the College who have had course 1. Assistant Professor Baumgartner and Miss Nowlin. (b) A course dealing with the chordates, and designed especially for students preparing for the study of medicine. Assistant Professor Baumgartner and Mr. Robertson.

3.—TEACHERS' COURSE. 1st term, daily, 3:30 to 5:30. A course in zoölogy for those who expect to teach. Methods used in collecting, preserving and preparing specimens for the museum and classroom. Methods of instruction. Open to all who have taken courses 1 and 2 or their equivalent. Professor Dyche.

4.—SYSTEMATIC AND DESCRIPTIVE ZOÖLOGY. Throughout the year, 3:30 to 5:30. Lectures, with exhibition of specimens. Laboratory work in systematic zoölogy. Open to Juniors, Seniors and Graduates who have taken courses 1 and 2. Professor Dyche.

5.—FIELD-WORK AND LIFE-HISTORIES. Three hours, 2d term, Monday and Friday, at 3:30, and Saturday morning. A systematic and ecological study of the local fauna. Open to Juniors and Seniors who have had courses 1 and 2 or equivalent. Assistant Professor Baumgartner.

6.—HISTORY AND PHILOSOPHY OF ZOÖLOGY. One hour, Monday, at 11. A course of dealing with the development of the science of zoölogy. In this course consideration will be given to the large movements that have led up to the present form of the science, and to the general principles that have been evolved. Open to Juniors and Seniors in the College. Professor McClung.

7.—HISTOLOGY, OR MICROSCOPIC ANATOMY. Five hours, 1st term, 3:30 to 5:30. Microscopical manipulation, the study of normal tissues and the methods of preparing mounted objects are presented in this course. Lectures and laboratory work. Open to Juniors, Seniors and Graduates who have taken courses 1 and 2 or equivalents. Assistant Professor Baumgartner.

8.—CYTOLOGY, OR CELLULAR BIOLOGY. Five or ten hours, throughout the year, by appointment. A course in cell structure and development. Lectures and laboratory work. Open to Juniors, Seniors and Graduates who have taken courses 1 and 2. Professor McClung.

9.—EMBRYOLOGY. Five hours, 2d term, by appointment. The ontogeny of the chick, shark, etc. Open to Juniors, Seniors and Graduates who have taken course 7 or 8. Professor McClung.

10.—PALEOZOÖLOGY. Five hours, by appointment. A course dealing with the succession of animal life upon the earth. Open to Juniors, Seniors and Graduates who have had courses 1 and 2. Geology 1 is recommended as further preparatory work. Professor McClung.

11.—ECHINODERMS. Five hours, by appointment. This course deals with the development and morphology of echinoderms. Open to Juniors, Seniors and Graduates who have taken courses 1 and 2. Professor Hunter.

12.—VERMES. Five hours, by appointment. The development and morphology of vermes. For those who intend to study medicine, special attention is given to parasitic forms. Open to Juniors and Seniors who have had courses 1 and 2. Professor Hunter.

13.—SEMINAR. One or two hours, 1st and 2d terms. An opportunity is offered a limited number of sufficiently prepared students to take up the literature of important researches upon special topics or upon general biological problems. The results obtained must be embodied in carefully prepared papers and given in the form of lectures.

FOR GRADUATES ONLY.

14.—ADVANCED ORIGINAL WORK IN MORPHOLOGICAL ZOÖLOGY. Five or ten hours, throughout the year, by appointment. Professor McClung.

15.—ADVANCED ORIGINAL WORK IN SYSTEMATIC AND DESCRIPTIVE ZOÖLOGY. Five or ten hours, throughout the year, by appointment. Professor Dyche.

16.—ADVANCED ORIGINAL WORK IN HISTOGENESIS AND ORGANOGENESIS. Five or ten hours, throughout the year, by appointment. Professor McClung.

17.—ADVANCED ORIGINAL WORK IN CYTOLOGY. Five or ten hours, throughout the year, by appointment. Professor McClung.

18.—ADVANCED ORIGINAL WORK IN VERTEBRATE PALEONTOLOGY. Five or ten hours, throughout the year, by appointment. Professor McClung.

19.—MUSEUM WORK AND METHODS. Five or ten hours, by appointment. Professor Dyche.

20.—COMPARATIVE ANATOMY AND OSTEOLOGY. Five or ten hours, by appointment. Professor Dyche.

Students desiring to do graduate work in the department must be able to read French and German, and must have special preparation for the work they wish to undertake. It is recommended that at least twenty hours' work be offered for the major requirement of the master's degree.

III. SCHOOL OF ENGINEERING.

FACULTY.

- FRANK STRONG, Ph. D., President.
- FRANK O. MARVIN, A. M., Dean. Professor of Civil Engineering.
- EPHRAIM MILLER, Ph. D., Professor of Mathematics and Astronomy.
- WILLIAM H. CARRUTH, Ph. D., Professor of Germanic Languages.
- EDGAR H. S. BAILEY, Ph. D., Professor of Chemistry and Metallurgy.
- LUCIEN I. BLAKE, Ph. D.
- EDWIN M. HOPKINS, Ph. D., Professor of Rhetoric and English Language.
- ERASMUS HAWORTH, Ph. D., Professor of Physical Geology and Mineralogy.
- EUGENIE GALLOO, A. M., Professor of Romance Languages and Literatures.
- HENRY B. NEWSON, Ph. D., Professor of Mathematics.
- BRUCE V. HILL, Ph. D., Acting Professor of Physics and Electrical Engineering.
- PERLEY F. WALKER, M. M. E., Professor of Mechanical Engineering.
- ROBERT K. DUNCAN, A. B., Professor of Industrial Chemistry.
- ELMER F. ENGEL, A. M., Associate Professor of German.
- HAMILTON P. CADY, Ph. D., Associate Professor of Chemistry.
- MARTIN E. RICE, M. S., Secretary. Associate Professor of Physics and Electrical Engineering.
- WILLIAM C. HOAD,* B. S., Associate Professor of Civil Engineering.
- FRANK E. WARD, Superintendent of Fowler Shops.
- JOHN N. VAN DER VRIES, Ph. D., Associate Professor of Mathematics.
- B. J. DALTON, B. S., Associate Professor of Railway Engineering.
- CLINTON M. YOUNG, B. S., Associate Professor of Mining Engineering.
- HERBERT A. RICE, Associate Professor of Civil Engineering.
- RALPH E. BASSETT, A. M., Associate Professor of Spanish.

* Absent on leave, 1906-'07.

ALMA LE DUC, Ph. B., Assistant Professor of French.

ALBERTA L. CORBIN, Ph. D., Assistant Professor of German.

FREDERIC N. RAYMOND, A. M., Assistant Professor of English.

MARGARET LYNN, A. M., Assistant Professor of English.

RICHARD M. FREEMAN, E. E., Assistant Professor of Electrical Engineering.

FRANK E. BRYANT, A. M., Assistant Professor of English.

GEORGE J. HOOD,* B. S., Assistant Professor of Mechanical Drawing.

DAVID F. MCFARLAND, A. M., Assistant Professor of Chemistry.

CHARLES H. ASHTON, A. M., Assistant Professor of Mathematics.

GEORGE F. KAY, A. M., Assistant Professor of Mineralogy.

ROBERT W. CURTIS, Ph. D., Assistant Professor of Chemistry.

ALBERT K. HUBBARD, Ph. B., Assistant Professor of Civil Engineering.

CHARLES I. CORP, B. S., Assistant Professor of Mechanical Engineering.

EDWIN F. STIMPSON, B. S., Assistant Professor of Physics.

JAMES D. NEWTON, M. E., Assistant Professor of Civil Engineering.

SOL E. HUTTON,† E. E., Assistant Professor of Mechanical Drawing.

SHERWOOD HINDS,† B. S., Assistant Professor of Mechanical Drawing.

CHARLES H. GRAY, Ph. D., Assistant Professor of English.

HERBERT H. VAUGHAN, Ph. D., Assistant Professor of French and Spanish.

LOUIS E. SISSON, A. B., Assistant Professor of English.

HENRY O. KRUSE, A. M., Assistant Professor of German.

ELISE NEUEN SCHWANDER, A. B., Assistant Professor of French.

FRANCIS W. BUSHONG, S. D., Assistant Professor of Chemistry.

GEORGE W. HANSON, Forge and Foundry Instructor.

FRANK E. JONES, Instructor in Pattern-making.

LULU GARDNER, A. B., Instructor in English.

ULYSSES G. MITCHELL, A. B., Instructor in Mathematics.

ARTHUR D. PITCHER, A. B., Instructor in Mathematics.

JAMES A. CAMPBELL, A. M., Instructor in German.

* Absent on leave, 1906-'07.

† For year 1906-'07.

PURPOSE OF THE SCHOOL.

The School of Engineering is the scientific or technical school of the University. It offers what is, in the main, technical training in the various departments of engineering—civil, electrical, mechanical, mining, and chemical. The course of study in each of these branches of engineering is designed first of all to furnish a broad and thorough training in mathematics, mechanics, drawing, and physical science, the fundamental subjects on which the more professional subjects are based. The five courses are nearly identical up to the end of the Sophomore year, but differ considerably thereafter, each emphasizing the subjects peculiar to itself and giving as much technical training as is consistent with the thorough inculcation of sound theory.

DEGREES.

All courses in the School of Engineering lead to the degree of bachelor of science.

All work for higher degrees is under the supervision of the Faculty of the Graduate School. For the regulations governing the granting of advanced degrees, see announcements under the head of "Graduate School," and for the work open to graduate students, see "Courses of Instruction," as given in the catalogue of the College.

ADMISSION.

There are two methods of admission to the School of Engineering of the University: First, by examination; second, by certificate.

1. BY EXAMINATION.

Times and place of examination for admission to the School of Engineering are the same as for admission to the College. Candidates may divide the examination between two years, as noted.

2. BY CERTIFICATE.

Nearly all students enter the School of Engineering by certificate from high schools, academies, preparatory schools of other colleges and universities, or from military schools, accredited by the University. The candidate for admission by certificate must present either a certificate or other credential, as noted in connection with admission to the College. The same rules apply in regard to admission by certificate to the School of Engineering as apply for admission to the College.

DEFICIENCIES AND UNITS OF ADMISSION.

The candidate may be admitted to the Freshman class although deficient in some of the requirements as laid down below, provided such deficiency does not exceed three units, and that not more than one unit be in any one required subject. All deficiencies must be made good within such time as may be fixed in each individual case by the Dean of the School of Engineering.

Applicants for admission are advised to come without deficiencies, and to be especially well prepared in algebra and geometry.

An entrance unit represents five periods a week, of not less than forty minutes each, for thirty-five weeks. A unit in the School of Engineering represents five periods a week for a half-year. In making up deficiencies in University classes, one School of Engineering unit is counted as equivalent to one entrance unit.

SUBJECTS FOR ADMISSION.

Fifteen units are required for admission.

REQUIRED.		OPTIONAL.	
Mathematics 1, 2, 3, algebra and plane and solid geometry	3 units.	Latin 1, 2, 3,	3 units.
English 1, 2, 3,	3 "	German 1, 2, 3,	3 "
Physics	1 "	French 1, 2, 3,	3 "
Free-hand drawing	1 "	Greek and Rom. Hist.	1 "
Foreign language—may be French or German or Latin; 3 units of one, or 2 units of any one and 1 unit of any other,	3 "	English history	1 "
		American history	1 "
		Chemistry	1 "
		Higher algebra and plane trigonometry	1 "
		Physical geography	1 "
		Botany	1 "
		Zoölogy	1 "
		Economics	1 "
		Manual training	1 "

Required, 11 units.

Optional, 4 "

Total, 15 units.

Four units must be chosen from the optional list.

COLLEGE CREDIT.

College credit for work in preparatory schools will be given upon examination only. For times and place of such examination, see the College catalogue.

ACCREDITED SCHOOLS.

The list of schools accredited to the School of Engineering is practically the same as that of schools accredited to the College.

ADMISSION TO ADVANCED STUDIES.

For any advanced rank, the applicant must have completed all of the studies of the course below the rank for which he applies, including the entrance requirements, or their substantial equivalent, as determined by the committee on advanced standing. Application for credits in single subjects will also be passed upon by this committee, in connection with the Dean of the Engineering School.

SPECIAL STUDENTS.

Opportunity is given in the School of Engineering for the admission of persons of mature years who desire to pursue some special line of work, without following any prescribed course or becoming candidates for a degree.

The admission of such special students is directly under the control of the Dean of the School of Engineering, whose certificate of acceptance must be presented to the Registrar before registration. Applicants for standing as special students must present satisfactory evidence of proper preparation for the studies desired and must also meet other requirements as fixed by the Faculty.

Special students are subject to the same regulations as regular students with regard to the quality of work performed and attendance at recitations and examinations, but not as to number of studies to be pursued.

REGISTRATION AND ENROLMENT.

All candidates for admission to the School of Engineering having high-school certificates, and all students intending to pursue their studies in the ensuing year, must present themselves for registration at the University on September 18 to 21, inclusive, 1907. Registration at a later date will be permitted only on the presentation of a satisfactory reason for the delay.

The Dean of the School of Engineering is charged with the execution of all University and Faculty rules relating to the enrolment of students in classes and their choice of studies.

Upon registration, each student will receive from the Registrar a certificate of his standing, which he will present to the Dean of the school, who is charged with the duty of enrolment of students in classes, the selection and arrangement of subjects, and the assignment of hours.

At least two weeks before the close of any term, each student then in attendance must present his application for enrolment for the term following to the Dean, whose approval of the work selected is a necessary condition for admission to classes.

INADEQUATE PREPARATION.

When students show by their current work insufficient entrance preparation in any study, they may be required to make good such deficiency in any manner prescribed by their instructors.

GRADES AND FAILURES.

Examinations are held at regular stated periods and at such other times as may be provided for by the regulations of the Faculty. At the close of each term, a summary of the student's work is reported to the Registrar, for entry upon the general record. At the end of each half-year, the parent or guardian of each student will be furnished, on request, a copy of the entries relating to that student.

Absence from examination or failure in more than one-third of his work, in any one term, severs a student's connection with the University, which can only be renewed through the consent of the Dean of the school.

EXPENSES.

By legislative enactment, each student from the state of Kansas in the School of Engineering must pay a matriculation fee of five dollars (paid but once, on entrance), and a yearly incidental fee of ten dollars. Non-residents of Kansas must pay a matriculation fee of ten dollars, and an incidental fee of twenty dollars.

SHOP AND LABORATORY SUPPLIES.

All the laboratories of the University and their equipment of power, engines, machinery, light, desks, tables, balances, microscopes, models and complete apparatus are at the disposal of the students, under the direction of their instructors. These desks, benches and tables will be further provided with individual sets of tools, sets of working apparatus, and equipment, for which the student will be held responsible and expected to return in good condition. Students are requested to check these up at time of entering a laboratory course to see that they get all that are charged to them. At the end of the course, or at the discretion of the instructor, all the individual equipment in good order must be returned. Such as may have been lost, damaged, broken or destroyed by the student must be paid for by him at that time. Material of every kind consumed, ground up or used in the manifold experiments and practices in the laboratories must be paid for by the student. Students providing themselves with the exact change may obtain this of the storekeepers in any quantity at the various department

storerooms at its cost. For the economic and prompt supply of such material, coupon books, good in all departments, are furnished at the business office, in the amounts of five dollars and two dollars. Any coupons unused are redeemable in cash at the Secretary's office at the end of the course.

SUMMER FIELD-WORK.

No fee will be charged for the use of instruments in summer field-work. Each student will be charged the actual cost of living, and incidental expenses.

OTHER EXPENSES.

There are no dormitories connected with the University. Students find accommodations in the boarding-houses and homes of Lawrence. Information concerning the location of rooming- and boarding-places may be had at the office of the Registrar.

The average price of board, rooms, light and fuel may be placed at \$4 a week. Some persons who furnish plain rooms and good, plain food receive boarders at \$3 a week. Day board in private families and at city restaurants may be obtained for \$2.75 to \$4 a week. Day board in clubs varies from \$2.50 to \$3 a week. Furnished rooms, usually occupied by two students, range from \$4 to \$15 a month. Unfurnished rooms rent for \$1.50 to \$3 a month. Students who can supply their own furniture and buy and prepare provisions for the table themselves can attend the University for very little cost in money.

The following table shows the estimated expenses of a student of the University for a year, excluding clothing and traveling expenses; the expense varies with the course pursued, and also depends upon the tastes and habits of the student:

	<i>Low.</i>	<i>Average.</i>
Board.....	\$100 00	\$120 00
Room.....	20 00	40 00
Books and stationery.....	8 00	15 00
Laundry.....	8 00	20 00
Matriculation and other fees.....	15 00	15 00
Incidentals.....	15 00	50 00
Totals.....	\$166 00	\$260 00

SELF-HELP.

Many students find work in private families, in offices, and in various occupations, by means of which they defray a portion of their expenses. Some students have earned their entire expenses while in attendance, and have made good records at the same

time; other students have done so much work that they have not been able to keep up their studies, and have thus missed the one thing for which they came. If it is possible for the student to have a part of his expenses paid, he should not attempt to earn his way entirely by his own exertions. The University cannot guarantee work to any student, but will lend every possible assistance in finding employment. The University Christian Associations maintain employment bureaus, where the names of those seeking work and of those desiring workers are recorded. Students desiring to help themselves are advised to apply early to the University Y. M. C. A. or to the Registrar, University of Kansas, Lawrence.

COURSES OF STUDY.

LEADING TO THE DEGREE OF BACHELOR OF SCIENCE.

The courses of study in the School of Engineering are almost entirely required. The work is in the main technical, and requires preparation of a high order, especially in mathematics. It also requires exhaustive effort in the courses themselves, which call for the entire time of the student to do it satisfactorily.

The work of the Freshman year is common to all students of the School of Engineering, so that a choice between the several lines of engineering need not be made until after a year's experience with college life. As a further aid in making an intelligent choice, the general aims of the several courses are here briefly stated.

CIVIL ENGINEERING.

The first aim is to impart as broad a scientific training as the length of the course and the essential professional studies will allow, so that as many avenues to successful service as possible may be open to the graduate. Along professional lines, emphasis is laid first on work in surveying and field methods, as these are of special value to young engineers; second, on mechanics and its applications to the designs of roofs and bridges and other structures; third, on railway location and construction; fourth, on hydraulics and its applications to irrigation and canal work; fifth, on sanitary and municipal engineering, including water-supply, sewerage, and roads and pavements. Stress is placed on the study of principles, as being the things not likely to be acquired in after-life.

ELECTRICAL ENGINEERING.

The course in electrical engineering is designed to train the student in those fundamental principles of applied mathematics, chemistry, mechanics and electricity which form the basis of all successful specialization. The laboratory and shop work is arranged to develop and to encourage individual skill and ingenuity. Such experience in practical work as is possible is also included. The thesis involves original investigation.

MECHANICAL ENGINEERING.

In addition to the fundamental sciences common to all branches of engineering, this course offers professional work for students wishing to specialize in steam and gas engineering or mill engineering.

For the first branch the special work includes the designing of steam- and gas-engines and steam-turbines, and a study of methods of power distribution and application by both mechanical and electrical means. Complete power-plant designs are made, both for the generation of electrical power and for direct use in manufacturing plants, and students become familiar with all forms of steam, gas, air-compressing, hydraulic and electrical machinery through their study and operation in the laboratories.

For mill engineering, the special work includes the designing of mill or shop buildings, traveling cranes, etc., and power-distribution systems. It is intended to suit the needs of prospective engineers and managers of manufacturing plants of all kinds.

MINING ENGINEERING.

The object of the course in mining is to qualify students for future work in prospecting, mining, milling, and smelting, in accordance with modern scientific principles. In adopting the course of study, it was endeavored to include a sufficient requirement in language work to give the student a good knowledge of English, French, and German, and to adjust the various essential subjects—mathematics, engineering, chemistry, metallurgy, mining, mineralogy, and geology—so that upon the completion of the course one may be well qualified for specializing along any line which his future life may make desirable.

CHEMICAL ENGINEERING.

This course affords students an opportunity to specialize in chemistry, and to fit themselves for positions as chemists, managers or superintendents of manufacturing plants where the work is based on chemical science. This would include such industries as that of iron, zinc, gold and silver smelting and refining, the making of fertilizers, clay-working, sugar-refining, dyeing, bleaching, gas-making, cement-making and general chemical manufacture. This course is broad enough for general training, and may be made special enough for technical work.

WORK IN COMMON.

FRESHMAN YEAR.

All students of the School of Engineering have work in common during the Freshman year, the differentiation between courses occurring in the Sophomore year. In the statement of courses below, following each subject is stated the number of hours per week of class exercise given to it; (a) and (b) signify first and second half-terms.

The modern foreign language chosen must be carried throughout the year, five hours each term.

The grade of the courses will depend on the amount and kind of language offered for entrance.

First Term:

English 1, three hours, 8, 9, 10:15, 11:15, 3:30, or 4:30. Assistant Professor Raymond, Assistant Professor Gardner and instructors.

Elementary Mechanics, two hours, at 8, 9, 10:15, 11:15, 3:30, or 4:30. Assistant Professor Hood and assistants.

French, German, or Spanish, five hours.

College Algebra (Mathematics 2), three hours, Monday, Wednesday, and Friday, at 8, 9, 10, 11:15, or 3:30.

Plane Trigonometry (Mathematics 3), two hours, Tuesday and Thursday, at 8, 9, 10, 11:15, or 3:30.

Free-hand Drawing (Mechanical Drawing 1), six hours for first six weeks of term—Monday, Wednesday, and Friday, from 8 to 10, from 10:15 to 11:15, from 1:30 to 3:30, from 3:30 to 5:30; Tuesday and Thursday, from 1:30 to 3:30, and Saturday, from 8 to 10; or Tuesday and Thursday, from 3:30 to 5:30, and Saturday, from 10 to 12. Assistant Professor Hood and assistants.

Geometrical Drawing (Mechanical Drawing 2), six hours for last fourteen weeks of term. Same days and hours as for free-hand drawing. Assistant Professor Hood and assistants.

Shop Work 1 or 2, five hours. Mr. Hanson and Mr. Jones.

Second Term:

French, German, or Spanish, five hours.

Analytical Geometry I (Mathematics 4), two hours, Tuesday and Thursday, at 8, 9, 10:15, 2:30, or 3:30.

Calculus I (Mathematics 5), three hours, Monday, Wednesday, and Friday, at 8, 9, 10:15, 2:30, or 3:30.

Descriptive Geometry (Mechanical Drawing 3), three hours, Monday, Wednesday, and Friday, at 8, 9, 10:15, 11:15, 3:30, or 4:30. Assistant Professor Hood and assistants.

English 2, two hours, at 8, 9, 10:15, 11:15, 3:30, or 4:30. Assistant Professors Raymond and Gardner and instructors.

Projection Drawing (Mechanical Drawing 4), six hours, Monday, Wednesday, and Friday, from 8 to 10, from 10:15 to 12:15, or from 1:30 to 3:30, or from 3:30 to 5:30; Tuesday and Thursday, from 1:30 to 3:30, and Saturday, from 8 to 10; or Tuesday and Thursday, from 3:30 to 5:30, and Saturday, from 10 to 12. Assistant Professor Hood and assistants.

Shop Work 1 or 2, five hours. Mr. Hanson and Mr. Jones.

For irregular students, classes in English, algebra and trigonometry, French 1 and German 1 and 3 are given in the second term, and classes in analytical and descriptive geometry, calculus, French 2 and German 2 are given in the first term.

CIVIL ENGINEERING.

SOPHOMORE YEAR.

First Term:

Physics 7, lectures four hours, at 11:15, and laboratory two hours.

Professor Hill and Assistant Professor Stimpson.

Chemistry 2, lectures three hours and laboratory four hours, 8 to 10. Associate Professor Cady and assistants.

Calculus II (Mathematics 7), three hours, Monday, Wednesday, and Friday, at 10:15.

Analytical Geometry II (Mathematics 6), two hours, Tuesday and Thursday, at 10:15.

Shades, Shadows, and Perspective (Mechanical Drawing 5), six hours, Monday and Wednesday, or Tuesday and Friday, 1:30 to 4:30. Assistant Professor Hubbard.

Shop Work 3, five hours, 1 to 6. Mr. Ward.

One technical report.

Second Term:

Physics 8, lectures four hours, at 11:15, and laboratory two hours. Professor Hill and Assistant Professor Stimpson.

Surveying (Civil Engineering 5), five hours, at 10:15 or 11:15, and field-work five hours. Associate Professor Dalton and Assistant Professor Hubbard.

Qualitative Analysis (Chemistry 3), lectures two hours and laboratory six hours, 8 to 10. Associate Professor Cady and assistants.

Topographical Drawing (Civil Engineering 1), six hours, Monday and Wednesday, or Thursday and Friday, 1:30 to 4:30. Assistant Professor Hubbard.

Shop Work 4, five hours, 1 to 6. Mr. Ward.
One technical report.

Summer Vacation:

Surveying (Civil Engineering 6). Associate Professor Dalton and assistants.

JUNIOR YEAR.

First Term:

Mechanics 1, five hours, at 8 and 9. Associate Professor H. A. Rice and Assistant Professor Hubbard.

Advanced English Composition (English 3), four hours, Tuesday and Thursday, at 8, with conferences Wednesday and Friday. Assistant Professors Raymond and Gray.

Geology 1, five hours, at 11:15. Professor Haworth.

Railway Surveying (Civil Engineering 11), five hours, at 10:15, and field-work five hours. Associate Professor Dalton.

Railway Drawing (Civil Engineering 2), six hours, Tuesday and Friday, 1:30 to 4:30. Associate Professor Dalton.

Second Term:

Strength of Materials (Mechanics 2), four hours, at 8 or 10:15. Associate Professor H. A. Rice.

Engines and Boilers (Mechanical Engineering 7), five hours, at 11:15. Assistant Professor Corp.

Location of Railways (Civil Engineering 10), three hours, Monday, Wednesday, and Friday, at 9. Associate Professor Dalton.

Roads and Pavements (Civil Engineering 9), two hours, Tuesday and Thursday, at 9. Associate Professor Dalton.

Graphical Statics (Civil Engineering 3), six hours, Tuesday and Friday, 1:30 to 4:30. Associate Professor Hoad.

Testing Laboratory (Mechanics 3), four hours, Monday, Tuesday, Thursday, or Friday, 1:30 to 5:30, or Saturday, 8 to 12. Assistant Professor Corp and assistants.

One technical report.

Summer Vacation:

Surveying (Civil Engineering 4). Associate Professor Dalton and assistants.

SENIOR YEAR.

First Term:

Hydraulics (Mechanics 4), (a), four hours, at 10:15. Assistant Professor Hubbard.

Hydraulic Machinery (Mechanical Engineering 10), (b), four hours, at 10:15. Professor Walker.

Hydraulic Laboratory (Mechanics 5), two hours, Monday, Wednesday, or Friday, 3:30 to 5:30. Assistant Professor Corp.
 Roofs and Bridges (Civil Engineering 14), ten hours, 1:30 to 3:30. Associate Professor H. A. Rice.
 Sewerage (Civil Engineering 12), (a), five hours, at 11:15. Associate Professor Hoad.
 Water-supply (Civil Engineering 13), (b), five hours, at 11:15. Associate Professor Hoad.
 Masonry (Civil Engineering 8), (b), five hours, at 8. Assistant Professor Hubbard.
 One technical report.


Second Term:

Bridge Designing (Civil Engineering 15), ten hours, 1:30 to 3:30. Associate Professor H. A. Rice.
 Specifications and Contracts (Civil Engineering 4), (b), five hours, at 11:15. Professor Marvin.
 Cement Laboratory (Civil Engineering 7), four hours, Monday and Thursday, 3:30 to 5:30. Associate Professor Hoad.
 One full term's work chosen from engineering, mathematical or science subjects not required in course.
 Thesis.

ELECTRICAL ENGINEERING.

SOPHOMORE YEAR.

First Term:

Physics 7, lectures and recitations four hours, Monday, Tuesday, Wednesday, and Thursday, 11:15. One two-hour laboratory period per week. Professor Hill, Associate Professor M. E. Rice, and Assistant Professor Stimpson.
 Calculus II (Mathematics 7), three hours, Monday, Wednesday, and Friday, at 10:15.
 Analytic Geometry II (Mathematics 6), two hours, Tuesday and Thursday, at 10:15.
 Chemistry 2, lectures three hours and laboratory four hours, 8 to 10. Associate Professor Cady and Assistant Professor McFarland.
 Machine Drawing (Mechanical Drawing 6), six hours, Monday and Wednesday, 1:30 to 4:30. Assistant Professor ——. 
 Shop Work 3, five hours, 1 to 6. Mr. Ward.
 One technical report.

Second Term:

Qualitative Analysis (Chemistry 3), lectures two hours and laboratory six hours, 8 to 10. Associate Professor Cady.

Physics 8, lectures and recitations four hours, Monday, Tuesday, Wednesday, and Thursday, at 11:15. One two-hour laboratory period per week. Professor Hill, Associate Professor M. E. Rice, and Assistant Professor Stimpson.

Machine Drawing (Mechanical Engineering 1), six hours, Monday and Wednesday, 1:30 to 4:30; or Thursday, 1:30 to 4:30, and Saturday 9 to 12. Assistant Professor ———.

Steam-engines and Boilers (Mechanical Engineering 6), three hours, Monday, Wednesday, and Friday, at 10:20. Assistant Professor ———.

Mathematics 8a, two hours, Tuesday and Thursday, at 10:20. Professor Newson.

Shop Work 4, five hours, 1 to 6. Mr. Ward.

JUNIOR YEAR.

First Term:

Analytic Mechanics (Mechanics 1), five hours, at 8 and 9. Associate Professor H. A. Rice.

Theory of Electricity and Magnetism (Physics 7), five hours, at 10:20. Professor Hill.

Thermodynamics (Mechanical Engineering 11), five hours, at 11:20. Professor Walker.

Advanced English Composition (English 3), four hours, Tuesday and Thursday, at 8, with conferences Wednesday and Friday. Assistant Professors Raymond and Gray.

Electrical Laboratory (Physics 8), six hours, 1:30 to 4:30. Associate Professor M. E. Rice.

Shop Work 5, five hours, 1 to 6. Mr. Ward.

Second Term:

Dynamo Machinery (Electrical Engineering 2), three hours, Monday, Wednesday, and Friday, at 11:20. Associate Professor M. E. Rice.

Mechanics of Machinery (Mechanical Engineering 19), three hours, Monday, Wednesday, and Friday, at 8. Professor Walker.

Theory of Alternating Currents (Electrical Engineering 1), four hours, Monday, Tuesday, Wednesday, and Thursday, at 9. Professor Hill.

Electrical Laboratory (Electrical Engineering 5), six hours, from 1:30 to 5:30. Associate Professor M. E. Rice.

Strength of Materials (Mechanics 2), four hours, at 8 or 10. Associate Professor H. A. Rice.

Testing Laboratory (Mechanics 3), four hours, Monday, Tuesday, Thursday, or Friday, 1:30 to 5:30. Assistant Professors Corp and Hutton.

Shop Work 6, five hours, 1 to 6. Mr. Ward.

One technical report.

SENIOR YEAR.

First Term:

Dynamo Machinery (Electrical Engineering 3), five hours, at 11:15. Assistant Professor Freeman.

Physical Chemistry (Chemistry 22), five hours, at 10:15. Associate Professor Cady.

Dynamo Design (Electrical Engineering 4), three hours, Monday, Wednesday, and Friday, 8 to 10. Assistant Professor Freeman.

Machine Design (Mechanical Engineering 4), six hours, Tuesday and Thursday, 8 to 10. Assistant Professor ———.

Electrical Laboratory (Electrical Engineering 6), six hours, 2:30 to 5:30. Assistant Professor Freeman.

Engineering Laboratory (Mechanical Engineering 14), four hours, Tuesday or Thursday, 2:30 to 5:30. Professor Walker and Assistant Professor Corp.

One technical report.

Second Term:

Specifications and Contracts (Civil Engineering 4), (b), five hours, 11:20. Professor Marvin.

Professional Thesis (Electrical Engineering 11), six hours, by appointment.

Two and one-half terms' work to be chosen from any engineering or mathematical courses offered, subject to the approval of the department of electrical engineering. See special courses 7, 8 and 9 in electrical engineering.

MECHANICAL ENGINEERING.

SOPHOMORE YEAR.

First Term:

Physics 7, lectures four hours, at 11:15, and laboratory two hours. Professor Hill and Assistant Professor Stimpson.

Calculus II (Mathematics 7), three hours, Monday, Wednesday, and Friday, at 10:15.

Analytical Geometry II (Mathematics 6), two hours, Tuesday and Thursday, at 10:15.

Chemistry 2, lectures three hours and laboratory four hours, 8 to 10. Associate Professor Cady and Assistant Professor McFarland.

Machine Drawing (Mechanical Engineering 1), six hours, Monday and Wednesday, 1:30 to 4:30, or Thursday, 1:30 to 4:30, and Saturday, 9 to 12. Assistant Professor ———.

Shop Work 3, five hours, 1 to 6. Mr. Ward.

One technical report.

Second Term:

Physics 8, lectures four hours, at 11:15, and laboratory two hours. Professor Hill and Mr. Stimpson.

Qualitative Analysis (Chemistry 3), lectures two hours and laboratory six hours, 8 to 10. Associate Professor Cady and assistants.

Steam-engines and Boilers (Mechanical Engineering 6), three hours, at 10:15. Assistant Professor ———.

Calculus III (Mathematics 8a), two hours, Tuesday and Thursday, at 10:15. Professor Newson.

Machine Drawing (Mechanical Engineering 1), six hours, Monday and Wednesday, or Tuesday and Thursday, 1:30 to 4:30, Assistant Professor ———.

Shop Work 4, five hours, 1 to 6. Mr. Ward.

One technical report.

JUNIOR YEAR.

First Term:

Analytical Mechanics (Mechanics 1), five hours, at 8 or 9. Associate Professor H. A. Rice.

Dynamo Machinery (Electrical Engineering 14), five hours, at 10:15. Assistant Professor M. E. Rice.

Metallurgy 1 (Chemistry 21), five hours, at 11:15. Assistant Professor McFarland.

Electrical Laboratory (Electrical Engineering 6), three hours, 2:30 to 5:30. Associate Professor M. E. Rice.

Engineering Laboratory (Mechanical Engineering 14), four hours, Tuesday or Thursday, 1:30 to 5:30. Assistant Professor Corp.

Shop Work 5, five hours, 1 to 6. Mr. Ward.

Mechanical Engineering Society, once a week.

Second Term:

Strength of Materials (Mechanics 2), four hours, at 8 or 10:15. Associate Professor H. A. Rice.

Mechanics of Machinery (Mechanical Engineering 2), three hours, Monday, Wednesday, and Friday, at 9. Professor Walker.

Kinematics (Mechanical Engineering 3), six hours, Tuesday, Thursday, and Saturday, 8 to 10. Assistant Professor ———.

Electric Light and Power Transmission (Electrical Engineering 12), five hours, at 11:15. Assistant Professor Freeman.

Testing Laboratory (Mechanics 3), four hours, Monday, Tuesday, Thursday, or Friday, 1:30 to 5:30, or Saturday, 8 to 12. Assistant Professor Corp.

Shop Work 6, five hours, 1 to 6. Mr. Ward.

Mechanical Engineering Society, once a week.

One technical report.

Summer Vacation Work (Mechanical Engineering 17). This course to be done before graduation.

SENIOR YEAR.

First Term:

Advanced English Composition (English 3), four hours, Tuesday and Thursday, at 8, with conferences Wednesday and Friday. Assistant Professors Raymond and Gray.

Hydraulics (Mechanics 4), (a), four hours, at 10:15. Assistant Professor Hubbard.

Hydraulic Machinery (Mechanical Engineering 10), (b), four hours, at 10:15. Professor Walker.

Hydraulic Laboratory (Mechanics 5), Monday, Wednesday, or Friday, 3:30 to 5:30. Assistant Professor Corp.

Thermodynamics (Mechanical Engineering 11), four hours, at 11:15. Professor Walker.

The Gas-engine (Mechanical Engineering 9), two hours, Tuesday and Thursday, at 9. Associate Professor Walker.

Machine Design (Mechanical Engineering 4), six hours, Monday and Wednesday, 2:30 to 5:30. Professor Walker.

General Machine Design (Mechanical Engineering 8), three hours, Monday, Wednesday, and Friday, at 9. Assistant Professor Corp.

Thesis Work (Mechanical Engineering 17), two hours, Friday, 1:30 to 3:30.

Mechanical Engineering Society, once a week.

One technical report.

Second Term:

Specifications and Contracts (Civil Engineering 4), (b), five hours, at 11:15. Dean Marvin.

Advanced Steam Engineering (Mechanical Engineering 12), three hours, Tuesday and Thursday, at 8 to 10. Professor Walker.

Engineering Practice (Mechanical Engineering 13), four hours, (a), at 11:15. Professor Walker.

Machine Design (Mechanical Engineering 5), eight hours, Monday and Thursday, 1:30 to 5:30. Professor Walker.

Engineering Laboratory (Mechanical Engineering 14), four hours, Wednesday, 1:30 to 5:30. Professor Walker.

Thesis Work (Mechanical Engineering 13), Friday, 1:30 to 5:30. Professor Walker.

Mechanical Engineering Society, once a week.

Summer Work, to be done before graduation.

MINING ENGINEERING.

SOPHOMORE YEAR.

First Term:

Chemistry 2, lectures three hours and laboratory four hours, 8 to 10. Associate Professor Cady and assistants.

Calculus II (Mathematics 7), three hours, Monday, Wednesday, and Friday, at 10:15.

Analytical Geometry II (Mathematics 6), two hours, Tuesday and Thursday, at 10:15.

Elementary Geology (Geology 1), lectures five hours, at 11:15. Professor Haworth.

Machine Drawing (Mechanical Drawing 6), six hours, Monday and Wednesday, 1:30 to 4:30, or Thursday, 1:30 to 4:30, and Saturday, 9 to 12. Assistant Professor ———.

Shop Work 3, five hours, 1 to 6. Mr. Ward.

Mining Journal Meeting, one hour.

One technical report.

Second Term:

Qualitative Analysis (Chemistry 3), lectures two hours and laboratory six hours, 8 to 10. Associate Professor Cady and assistants.

Surveying (Civil Engineering 5), five hours, at 10:15 or 11:15, and field-work five hours. Associate Professor Dalton and Assistant Professor Hubbard.

Mineralogy (Mineralogy 1), lectures and laboratory work, ten hours, from 3:30 to 5:30. Assistant Professor Kay.

Topographical Drawing (Civil Engineering 1), four hours, Thursday and Friday, 1:30 to 3:30. Assistant Professor Hubbard.

Mining Journal Meeting, one hour.

One technical report.

Summer Vacation:

Surveying (Civil Engineering 6), four weeks. Associate Professor Dalton and assistants.

JUNIOR YEAR.*First Term:*

Physics 7, lectures 4 hours, at 11:15, and laboratory two hours.

Professor Hill and Assistant Professor Stimpson.

Economic Geology (Geology 4), three hours, Monday, Wednesday, and Friday, at 9. Professor Haworth.

Mining 2, two hours, Tuesday and Thursday, at 9. Associate Professor Young.

Mining 1, five hours, at 8. Associate Professor Young.

Quantitative Analysis (Chemistry 7), lectures and laboratory work, ten hours, 3:30 to 5:30. Professor Bailey and Assistant Professor Curtis.

Shop Work 4, five hours, Saturday, 8 to 1. Mr. Ward.

Mining Journal Meeting, one hour.

One technical report.

Second Term:

Physics 8, lectures four hours, at 11:15, and laboratory two hours.

Professor Hill and Assistant Professor Stimpson.

Assaying and Metallurgical Analysis (Chemistry 14), ten hours, 3:30 to 5:30. Assistant Professor McFarland.

Mining 2, three hours, Monday, Wednesday, and Friday, at 10:15. Associate Professor Young.

Economic Geology (Geology 4), two hours, Tuesday and Thursday, at 10:15. Professor Haworth.

Mining Journal Meeting, one hour.

One technical report.

Summer Vacation:

Summer Excursion Work (Mining 8), four weeks. Professor Haworth and Associate Professor Young.

SENIOR YEAR.*First Term:*

Mining 3, five hours, at 10:15. Associate Professor Young.

Advanced English Composition (English 3), four hours, Tuesday and Thursday, at 8, with conferences Wednesday and Friday. Assistant Professors Raymond and Gray.

Mechanics 1, five hours, at 8 or 9. Associate Professor H. A. Rice.

Optional: Five hours from any geological, mathematical or engineering subjects not taken in the mining course.

Mining Journal Meeting, one hour.

Second Term:

Strength of Materials (Mechanics 2), four hours, at 10:15. Associate Professor H. A. Rice.

Testing Laboratory (Mechanics 3), Monday, Tuesday, Thursday, or Friday, 1:30 to 5:30, or Saturday, 8 to 12. Assistant Professors Hood and Corp.

Metallurgy II (Chemistry 20), five hours, at 10:15. Assistant Professor McFarland.

Mining 4, (a), five hours, at 11:15. Associate Professor Young. Specifications and Contracts (Civil Engineering 4), (b), five hours, at 11:15. Professor Marvin.

Professional Thesis. Professor Haworth and Associate Professor Young.

Mining Journal Meeting.

CHEMICAL ENGINEERING.

SOPHOMORE YEAR.

First Term:

Physics 7, lectures four hours, at 11:15, and laboratory two hours. Professor Hill and Assistant Professor Stimpson.

Chemistry 2, lectures three hours and laboratory four hours, 8 to 10. Associate Professor Cady and assistants.

Calculus II (Mathematics 7), three hours, Monday, Wednesday, and Friday, at 10:15 or 1:30.

Analytical Geometry II (Mathematics 6), two hours, Tuesday and Thursday, at 10:15 and 1:30.

Machine Drawing (Mechanical Drawing 6), six hours, Monday and Wednesday, 1:30 to 4:30, or Thursday, 1:30 to 4:30, and Saturday, 9 to 12. Assistant Professor —.

Shop Work 3, five hours, 1 to 6. Mr. Ward.

Chemical Club Meeting, Thursday, at 5.

One technical report.

Second Term:

Physics 8, lectures four hours, at 11:15, and laboratory two hours. Professor Hill and Assistant Professor Stimpson.

Qualitative Analysis (Chemistry 3), lectures two hours and laboratory six hours, 8 to 10. Associate Professor Cady and assistants.

Mineralogy (Mineralogy 1), ten hours, 3:30 to 5:30. Assistant Professor Kay.

Shop Work 4, five hours, 1 to 6. Mr. Ward.

Chemical Club Meeting, Thursday, at 5.

One technical report.

JUNIOR YEAR.

First Term:

Mechanics 1, five hours, at 8 or 9. Associate Professor H. A. Rice.

Advanced English Composition (English 3), four hours, Tuesday and Thursday, at 8, with conferences Wednesday and Friday. Assistant Professors Raymond and Gray.

Quantitative Analysis (Chemistry 7), twenty hours, 1:30 to 5:30. Professor Bailey and Assistant Professor Curtis.

Chemical Club Meeting, Thursday, at 5.

Second Term:

Strength of Materials (Mechanics 2), four hours, at 8 or 10:15. Associate Professor H. A. Rice.

Testing Laboratory (Mechanics 3), four hours, Monday, Tuesday, Thursday, or Friday, 1:30 to 5:30, or Saturday, 8 to 12. Assistant Professors Hood and Corp.

Organic Chemistry (Chemistry 17), ten hours, 3:30 to 5:30. Assistant Professor Curtis.

Metallurgy II, five hours, at 10:15. Assistant Professor McFarland.

Chemical Club Meeting, Thursday, at 5.

One technical report.

SENIOR YEAR.

First Term:

Physical Chemistry (Chemistry 22), five hours, at 10:15. Associate Professor Cady.

And two of the following: (1) Mechanics 4, Mechanical Engineering 10, and Mechanics 5. (2) Civil Engineering 12 and 13. (3) Mechanical Engineering 11. (4) Electrical Engineering 14. (5) Mining Engineering 1. (6) Geology 1. (7) Organic Preparations. (8) Technical Chemistry. (9) Metallurgy 1. (10) Mining 2 and Geology 4.

Chemical Club Meeting, Thursday, at 5.

One technical report.

Second Term:

Specifications and Contracts (Civil Engineering 4), (b), five hours, at 11:15. Professor Marvin.

Chemical Club Meeting, Thursday, at 5.

Assaying and Metallurgical Analysis (Chemistry 14), ten hours, 3:30 to 5:30. Assistant Professor McFarland.

Thesis.

And one of the following: (1) Mining Engineering 2 and Geology 4. (2) Mineralogy 3 and Geology 6, the College. (3) Mechanical Engineering 7. (4) Water Analysis. (5) Sugar Chemistry. (7) Chemistry 23, the College.

EQUIPMENT.

THE LIBRARY.

The scientific portion of the University library directly related to engineering contains about 12,000 volumes, while in the reading-room are found 285 American and foreign engineering and scientific journals.

ENGINEER'S INSTRUMENTS.

These comprise transits, levels, compasses, solar attachments, rods, chains, tapes, plane tables, heliotropes, current meter, aneroids, and other minor instruments. Among the above are a precise level for very accurate leveling, a secondary triangulation transit for topographical work, and an altazimuth instrument for use on primary triangulations, which has a ten-inch circle, read to single seconds of arc.

For the summer work in surveying a complete camping outfit is provided. Planimeters, Thatcher and Manheim slide rules and Colby's stadia slide rules are used for rapid calculation and estimation of quantities.

DRAWING-ROOMS.

These are well lighted and provided with tables. They are furnished with many photographs of actual constructions and the cases contain large numbers of blue-prints of working-drawings for bridges, railways, sewers, machinery, etc.

LABORATORIES.

The School of Engineering is well equipped with apparatus of modern pattern from the best makers.

PHYSICAL GEOLOGY AND MINING.

The department of physical geology and mining possesses a large collection of minerals and samples of rocks which are of economic value, and the necessary apparatus for their examination and identification.

The ore-dressing laboratory, located in the west basement of the Chemistry Building, contains stamps, jigs, crushers, screens (power and hand), hydraulic classifiers, spitz kasten and spitz lutte, an automatic ore-feeder, a slime table, a pulverizer, besides facilities for panning, vanning and sampling ores. It affords opportunities for practical training in making laboratory and field tests on ores. This work is supplemented by the mining museum, which contains a collection of implements and apparatus used in mining and milling operations, as well as models illustrating methods and processess.

CIVIL AND MUNICIPAL ENGINEERING.

In the testing laboratories are found an Olsen universal machine of 100,000 pounds capacity, a 50,000-pound torsion machine of the same make, a 50,000-pound transverse machine (which has been built in the Fowler Shops), a Riehle machine of 40,000 pounds capacity, a standard rattler for the testing of paving brick, together with scales, tools and appliances for making accurate tests of all kinds of materials. One room is devoted to the testing of hydraulic cements, and is equipped with an Olsen machine of 2000 pounds capacity, and an automatic shot machine of 1000 pounds capacity, convenient tables and racks, and a fair amount of accessory apparatus. Some machinery has been installed recently for testing the value of various stone for making macadam roads.

The hydraulic laboratory contains a measuring pit, a large steel orifice tank for experimentation with jets, a triplex power pump, a centrifugal pump, pipe-lines, weir-boxes, gages, a Venturi meter with manometer, a Pelton water motor, etc., arranged to illustrate the laws of fluid motion, and affording some opportunity for testing hydraulic machinery.

MECHANICAL ENGINEERING.

In the Fowler Shops there are three small rooms fitted up with apparatus for experimental work. In one of these, located on the ground floor, is a small boiler and a 10-horse-power Atlas slide-valve engine direct connected to an Alden absorption dynamometer; a small direct-acting steam-pump; two steam injectors set for testing; and an outfit for calibrating steam-engine indicator springs. The engine serves for practice in valve setting, and, in company with the boiler, for elementary efficiency tests. The engines and boilers in the power plant adjoining are available for commercial testing, and a 75-horse-power Ball engine in this equipment is cut out once each year for an efficiency test, to give opportunity for a complete thermal analysis by Hirn's method. A 9-inch Westinghouse air-brake pump is equipped with condenser and air-meter for efficiency tests.

In another room, in the basement, are located an 8-horse-power gas- or gasoline-engine, fully equipped with large measuring tanks for air and gas, pressure regulators, temperature-recording outfit, and brake for complete testing; two oil friction-testing machines; and two steam separators for testing.

In the third room, in the tower of the building, is the apparatus for coal, oil and gas testing, as follows: One Carpenter's oil viscosimeter, one open-cup flash-test apparatus, one chill-test apparatus

for oil, one Parr's standard calorimeter, apparatus for determination of sulfur in coal, apparatus for proximate analysis of coal, and Orsat's apparatus for flue-gas analysis.

Other equipment includes a working set of New York and Westinghouse air-brakes, three steam-engine and one gas-engine indicators, two throttling and two separating steam calorimeters, one Barrus superheating calorimeter, two standard gauge-testing outfits, a good assortment of planimeters, standard gauges, a Fuller calculating instrument, models of valve gears, and several specimens of boiler-tube cleaners.

ELECTRICAL ENGINEERING,

The dynamo-laboratory equipment consists of two D. C., Crocker Wheeler 3-horse-power motors, provided with separate shunt and series field spools, two General Electric double-current generators, $7\frac{1}{2}$ K. W., tapped on the alternating-current end for two-phase, three-phase or single-phase current at sixty cycles, a General Electric special laboratory machine, rated $7\frac{1}{2}$ K. W., consisting of a stationary armature, wound six-phase, and provided with a revolving field and three different types of induction motor rotors. There are also a Westinghouse 2-horse-power, three-phase motor, a Fort Wayne self-starting synchronous motor, and a number of small D. C. motors.

The machinery of the laboratory is run from a line shaft by a 15-horse-power Siemens and Halske motor. The laboratory is provided with a good assortment of Weston, Whitney and Thompson volt, ampere and watt meters, and auxiliary apparatus, such as resistances, reactances, transformers, etc.

The department has an excellent assortment of modern telephone apparatus. This includes complete sets for illustrating installations, of both local battery and central types. The best selective systems are represented, as well as a good working exhibit of automatic telephones.

CHEMICAL ENGINEERING.

The chemical laboratory contains separate rooms for general chemistry, qualitative analysis, quantitative analysis, physical chemistry, and assaying. There are abundant specimens and samples of chemical products to use for illustration. For physical chemistry, especially, the instruments for electrical measurements are of the newest designs and greatest accuracy. The department also has a liquid-air machine, so that experiments can be carried on at low temperatures. The assay-room is provided with the usual furnaces, muffles, etc., for the complete assay of metallurgical products.

THE FOWLER SHOPS.

This building contains in the boiler-room two Erie City return-flue, 16'x66" high-pressure boilers; also the present equipment of the experimental steam-engineering laboratory described above. Adjoining is the engine-room, in which is a Russell four-valve, medium-speed engine of 150 horse-power, and also a 75-horse-power Ball, high-speed, self-oiling engine. Both these engines are fitted with indicator connections and reducing gears. These two couple conjointly or independently on a short main-line shaft, from which are run the various power and lighting generators. These at present consist of one 1000-volt, 60 K. W., General Electric alternator; one 65 K. W., Siemens and Halske, D. C., 125 volts; one 17½ K. W., General Electric, D. C., 125 volts; one Bullock, 115 K. W., 1000-volt, three-phase, revolving-field light generator, and one T. A. regulator. Some sixteen independent circuits run from a central switchboard to various buildings and laboratories of the University, so that varieties of currents are always available. In the engine-room is also a Cookson feed-water heater and Cochran separators for each engine. Here, also, are installed a duplex 18"x12"x10" steam fire-pump, and a 7½"x5"x8" steam service pump for the water-supply of the University, and an exhaust-steam-heating equipment for heating the building. The forge-room, 50'x40', contains sixteen Sturtevant down-draft forges, with anvils and all usual smithing tools; there are also provided one large forge and a Little Giant power trip-hammer for heavier work.

The metal-working room, which is 80'x50', has 160 feet of benches, with twenty vises and usual bench tools. There are, at present, ten 14"x6' Standard engine-lathes; one 18"x12' Challenge engine-lathe, with all attachments; one crank shaper; one 25" Challenge drill-press, with back gear and self-feed; one universal cutter and reamer grinder; one 20" drill-press, with hand feed; one 1½" bolt-cutter; one universal milling-machine, with spiral gear-cutter, and vertical and all other attachments—all the above made by the American Tool Works Company, Cincinnati, Ohio. Also, one 26"x26"x7' Gray planer; one 18"x8' boring lathe; two 20" drill-presses, with power feed, and one 2"x24" Jones and Lawson turret-lathe with chucking attachments. There are also power hack-saws, dry and wet grinders, grindstones, etc., usually found in well-equipped shops. The line shafting is divided independently into three sections by friction-clutch couplings, and is run by a Westinghouse 4-pole, 15-horse-power motor. The tool-room, under care of an attendant, is well furnished with small tools and supplies, which are delivered to students on the check

system. This room also contains a 14"x5' Challenge engine-lathe with draw-bar chucks, and a power drill, both made by the American Tool Works Company, a Yankee drill-grinder, all run by an electric motor. Two 14"x6' engine-lathes, American Tool Works Company design, have been recently constructed by students as regular course work, and as additions to equipment. An electric freight elevator connects with the wood-working room above. This latter room, 80'x50', contains one 12"x6' speed lathe; one 18"x12' pattern-maker's lathe, with iron shears and traveling slide-rest and cross-feed; also floor stand and rear face plate; one scroll-saw; one combination cross-cut and rip-saw—with jointer head and boring attachment; one miter saw and universal trimmer; one Oliver hand-saw; nine double benches with tail vises and stops, and full sets of pattern-making tools for each; twelve Richardson iron-body, 11"x28" speed lathes, with full set of tools. A seven-foot face-plate lathe, a disk sandpapering machine and a boring-machine have been built by the students and added to the equipment. The shafting is run by electric motor. Opening from this is a wash-room, 40'x20', with stone floor, and 270 lockers. In the various benches are also 275 drawers, reserved, with the lockers, for the students' use. On this floor is also the dynamo laboratory, 40'x50'. In this, at present, is a central line shaft, operated at constant speed by a Siemens and Halske 15-horsepower motor. Split wood pulleys of assorted diameters allow a great range of speed for motors and generators used for experimental study. Two standard Crocker Wheeler, 2½ K. W., D. C. machines, with removal coils for shunt, series and compound winding, serve for D. C. experiments. There are also a 2½ K. W., single-phase, rotary transformer; one 3½ K. W., two-phase generator; and one 4½ K. W., 125 V., compound multipolar, D. C. generator; one 2 K. W., three-phase Westinghouse induction motor; one 7½ K. W., one-, two- and three-phase G. E. rotary converter; several 1000-volt transformers of various types.

NEW BUILDINGS FOR ENGINEERING.

The legislature of 1907 appropriated \$250,000 for new engineering buildings. A civil and mechanical engineering building to cost \$150,000, with equipment; a mining engineering building, \$50,000; and shops, \$50,000, will be erected during the biennium 1907-'09.

COURSES OF INSTRUCTION.

All courses that are given in the first half of any term are indicated by (*a*); those occurring in the second half of any term by (*b*). The statement of hours refers to the number of hours per week.

CHEMISTRY.

Professor BAILEY.
Associate Professor CADY.
Assistant Professor MCFARLAND.
Assistant Professor CURTIS.
Assistant Professor BUSHONG.
Mr. FORD.

2.—ADVANCED INORGANIC CHEMISTRY. Lectures, recitations, and laboratory work. Required in Engineering School, Sophomore. 1st term, lectures three hours and laboratory four hours, 8 to 10. Associate Professor Cady, Assistant Professor McFarland, and Mr. Faragher.

3.—QUALITATIVE ANALYSIS. Lectures and laboratory work. Bailey and Cady's Guide to the Study of Qualitative Analysis. Must be preceded by course 3. Required in the Engineering School, Sophomore. 2d term, lectures two hours and laboratory six hours, 8 to 10. Associate Professor Cady and assistant.

8.—QUANTITATIVE ANALYSIS. Lectures and laboratory work. Must be preceded by course 3. Required of chemical and mining engineers. 1st term, ten hours, 3:30 to 5:30; Professor Bailey and Assistant Professor Curtis. Or 2d term, ten hours, 8 to 10. Assistant Professor Curtis.

9.—GAS ANALYSIS. A laboratory course in the quantitative determination of the common gases, analysis of gaseous mixtures, flue gases, natural gas, etc. Both exact methods and technical methods will be employed. Gill's Gas Analysis and Hempel's Gas Analysis. Must be preceded by course 8. 1st term, two hours, Tuesday and Thursday, by appointment. Assistant Professor McFarland.

10.—OIL ANALYSIS. A laboratory course in the analysis of animal, vegetable or mineral oils. Determination of the specific gravity, viscosity, and other constants. Distillation as applied to mineral oils. Must be preceded by course 8. 2d term, three hours,

Monday, Wednesday, and Friday, by appointment. Assistant Professor Bushong.

11.—ELECTROLYTIC ESTIMATION OF METALS. A laboratory course in the practical work of analysis by electrolysis, including the use of the rotating cathode. Must be preceded by course 8. 2d term, two hours, by appointment. Assistant Professor Curtis.

12.—ANALYSIS OF BOILER FEED-WATERS. Optional for engineers. Must be preceded by course 8. 1st term, two hours. Professor Bailey.

14.—ASSAYING AND METALLURGICAL ANALYSIS. This is a course in the volumetric analysis of the ores of copper, lead, iron, zinc, manganese, etc., followed by the analysis of bullion. During the first half of the term the time will be occupied with the fire assay of the ores of gold, silver, and lead. Lectures and laboratory work. Furman's Manual of Practical Assaying. Must be preceded by course 8 and mineralogy 1. Required of chemical and mining engineers, Junior. 2d term, ten hours, 3:30 to 5:30, and by appointment. Assistant Professor McFarland.

16.—ORGANIC CHEMISTRY. A study of the hydrocarbons and their derivatives. Lectures, recitations, and laboratory work. Must be preceded by courses 1 and 2. Required of chemical engineers, Junior. 2d term, ten hours, 3:30 to 5:30. Assistant Professor Bushong and assistants.

23.—PHYSICAL CHEMISTRY. A course paying special attention to electrochemistry. Lectures and laboratory work. Must be preceded by chemistry 8, or by chemistry 3 and physics 7 and 8 and mathematics 7. Required of chemical engineers and electrical engineers; optional for mining engineers. 1st term, five hours, at 10:15. Associate Professor Cady.

Other courses in chemistry (the College) are open as optionals to chemical engineers.

CIVIL ENGINEERING.

Dean MARVIN.

Associate Professor HOAD.

Associate Professor H. A. RICE.

Associate Professor DALTON.

Assistant Professor HUBBARD.

Assistant Professor NEWTON.

1.—TOPOGRAPHICAL DRAWING. A study of and practice in the conventional methods of representing topography, coupled with the platting of the results of field-practice in connection with surveying. Required of Sophomore civil and mining engineering students. 2d

term, six hours, Monday and Wednesday, or Thursday and Friday, 1:30 to 4:30. Assistant Professor Hubbard.

2.—RAILWAY DRAWING. Railway plats, profiles and plans for track and small structures. Lectures and drawing-room practice in tracing and blue-printing and in platting the results of field-work. Required of civil engineering students. Junior, first term, six hours, Tuesday and Friday, 1:30 to 4:30. Associate Professor Dalton.

3.—GRAPHICAL STATICS. The properties of equilibrium polygons and other methods of representing the actions of forces, with application to the determination of stresses in beams, roof trusses, and stone arches. Lectures and drawing. Required of civil engineering students. Junior, 2d term, six hours, Tuesday and Friday, 1:30 to 4:30. Associate Professor Hoad.

4.—CONTRACTS AND SPECIFICATIONS.—An elementary course on the law of contracts, with special reference to engineering practice. The technical features of specifications. Methods of procedure in letting and conducting contract work, and the engineer's relation thereto. Required of all engineering students. Senior, 2d term, (b), five hours, at 11:15. Professor Marvin.

5.—SURVEYING. Engineer's instruments, their construction and adjustment. Methods of making and platting land, topographic, mining and hydrographic surveys. Sources of error and the means of controlling the precision of field-work. Leveling and earthwork. Required of civil and mining engineering students. Sophomore, 2d term, five hours, at 10:15 or 11:15, with one half-day per week in field-practice. Associate Professor Dalton and Assistant Professor Hubbard.

6.—SUMMER FIELD-WORK. Courses in practical surveying. The character of the work done will vary somewhat from year to year, depending upon the make-up of the body of students that go into camp. Small parties of three or four each are formed, and some of these are engaged in making topographical surveys of tracts of about one square mile each, laying out triangles and reading angles, leveling between stations, running stadia traverses, platting results, and drawing a contour map. Other parties may be engaged in laying out a short line of railway, in running precise levels, making a hydrographic survey, or gaging the flow of the Kansas river. All parties camp together. Required of Sophomore civil and mining engineering students and Junior civil engineering students. Ten hours per day for one month, at the close of the college year, in June. Associate Professor Dalton and assistants.

7.—HYDRAULIC CEMENT. A laboratory course in testing hydraulic cements and making comparison of their qualities. Reading, experimental work, and reports of tests made. Required of civil engineering students. Senior, 2d term, four hours, Monday and Wednesday, 3:30 to to 5:30. Associate Professor Hoad.

8.—MASONRY. Character of materials composing masonry. Methods of cutting and dressing stone. Foundations: Cribwork, coffer-dams, caissons, piles and pile-driving, concrete, pneumatic processes, etc. Masonry structures: Culverts, arches, piers, abutments, bridges, etc.; their form, construction, strength, and cost. Compound arches of concrete and metal. Recitations and lectures. Required of civil engineering students. Senior 1st term, (b), five hours, at 8. Assistant Professor Hubbard.

9.—ROADS AND PAVEMENTS. A study of the materials for and methods used in the construction and improvement of country roads and city pavements. Earthwork, drainage, the road foundation, the wearing surface, etc. Principles governing the location of roads. The economic importance of the "good-roads movement." Required of civil engineering students. Junior, 2d term, two hours, Tuesday and Thursday, at 9. Associate Professor Dalton.

10.—RAILWAY LOCATION. The principles involved in an economic location and construction of railways. Analysis of traffic and operating expenses. The influence of proposed changes in location upon the amount of total revenue from traffic, the bonded debt and the corresponding fixed charges for interest, the operating expense, and the dividend-paying capacity of the road. Methods of conducting field-work for preliminary and location surveys. Required of civil engineering students. Junior, 2d term, three hours, Monday, Wednesday, and Friday, at 9. Associate Professor Dalton.

11.—RAILWAY SURVEYING. A study of the methods of laying out and constructing railways. The setting out of simple and compound curves and calculation of excavation and embankment. Yards, turnouts, and switches. Easement curves of various types. Calculation of waterways, and methods of staking out foundations for culverts and bridges. This course must be preceded by a general course in surveying. Required of civil engineering students. Junior, 1st term, five hours, at 10:15, with field-practice one-half day per week. Associate Professor Dalton.

12.—SANITARY ENGINEERING. The collection, removal and disposal of sewage by various methods. Water-carriage and pneumatic systems. Separate and combined systems. The construction

of sewers, outfalls, manholes, and flushing appliances. Ventilation of sewers. Treatment of sewage. The collection and disposal of garbage and other refuse. Garbage destruction and utilization. Street cleaning. Required of civil engineering students. Senior, 1st term, (a), five hours, at 11:15. Associate Professor Hoad.

13.—SANITARY ENGINEERING. Water-supply. The requisites of a supply as to quality and quantity. The value of chemical and biological analyses and the interpretation of results. Relation of water-supply to the public health. Rainfall and the gathering and storage of surface-water. The collection of ground-water. The use of rivers and lakes as sources of supply. Distributing systems; conduits and pipe-lines, pumping machinery, the flow of water in open channels and closed conduits. The construction of dams and reservoirs. The purification of water. Methods of maintaining the efficiency of existing plants. Required of civil engineering students. Senior, 1st term, (b), five hours, at 11:15. Associate Professor Hoad.

14.—ROOFS AND BRIDGES. Analytical and graphical calculation of stresses in framed structures under various forms of loading. This course must be preceded by course 2 in mechanics. Required of civil engineering students. Senior, 1st term, ten hours, 1:30 to 3:30. Associate Professor H. A. Rice.

15.—BRIDGE DESIGNING. A study in bridge details and the dimensions of parts. Students work out designs for a plate girder and a simple truss. Must be preceded by course 14. Required of civil engineering students. Senior, 2d term, ten hours, 1:30 to 3:30. Associate Professor H. A. Rice.

19.—SANITARY ENGINEERING. A course designed to follow 12 and 13. Lectures, recitations, and reading. Optional for seniors. 2d term, five hours. Associate Professor Hoad.

20.—SHADES, SHADOWS, AND PERSPECTIVE. Required of civil engineering students. Sophomore, 1st term, six hours, Monday and Wednesday, or Thursday and Friday, 1:30 to 4:30. Assistant Professor Hubbard.

ELECTRICAL ENGINEERING.

Professor HILL.

Associate Professor M. E. RICE.

Assistant Professor FREEMAN.

Courses 1 to 6, inclusive, are required of all electrical engineering students. Courses 10 and 12 are required of mechanical engineering students. Courses 7, 8 and 9 are optional for electrical engineering students.

1.—THEORY OF ALTERNATING CURRENTS. A mathematical treatment of the principles involved in alternate-current phenomena and introductory to their application to machinery. Junior, 2d term, four hours, Monday, Tuesday, Wednesday, and Thursday, at 9. Professor Hill.

2.—DYNAMO MACHINERY. Theory and fundamental types of direct-current generators and motors. Junior, 2d term, three hours. Tuesday and Thursday, at 8, and Friday, at 9. Associate Professor M. E. Rice.

3.—DYNAMO MACHINERY. Theory and general types of alternating-current generators and motors. Senior, 1st term, five hours, at 11:15. Assistant Professor Freeman.

4.—DYNAMO DESIGN. Practical calculations and details of construction together with working-drawings for selected types of generators and motors. In addition to general class-room work each student will prepare one or more special designs which may afterward be constructed in the shops. Senior, 1st term, six hours, Monday, Wednesday, and Friday, 8 to 10. Assistant Professor Freeman.

5.—ELECTRICAL LABORATORY. A continuation of physics 8. Junior, 2d term, six hours, Monday and Tuesday, or Wednesday and Thursday, 1:30 to 4:30. Associate Professor M. E. Rice.

6.—ELECTRICAL LABORATORY. Senior, 1st term, six hours, 2:30 to 5:30. Assistant Professor Freeman.

7.—ELECTRIC LIGHTING. Senior, 2d term, (a), five hours, at 11:15. Assistant Professor Freeman.

8.—ELECTRIC POWER TRANSMISSION. Senior, 2d term, (b), five hours, at 9. Assistant Professor Freeman.

9.—ELEMENTARY TELEPHONE. Junior or Senior, 2d term, three or five hours, by appointment. Recitations and laboratory work. Professor Hill.

10.—ELECTRIC LIGHT AND POWER TRANSMISSION. A brief course. Required of mechanical engineering students. Junior, 2d term, five hours, at 8. Assistant Professor Freeman.

11.—PROFESSIONAL THESIS. Senior, 2d term, six hours, by appointment. Professor Hill or other instructor, according to the line of work chosen.

12.—DYNAMO MACHINERY. A briefer course than 2 or 3, covering both direct- and alternating-current machines. Must be preceded by physics 3 and 4 and calculus. Junior, 1st term, five hours, at 10:15. Associate Professor M. E. Rice.

ENGLISH LANGUAGE AND RHETORIC.

Assistant Professor RAYMOND.

Assistant Professor LYNN.

Assistant Professor SISSON.

Assistant Professor GRAY.

Assistant Professor GARDNER.

1.—RHETORIC AND ENGLISH COMPOSITION. Outlines of rhetoric, with exercises and themes. Required of all Freshmen. 1st term, three hours, at 8, 9, 10:15, 11:15, 3:30, or 4:30. Assistant Professors Lynn, Sisson, and Gardner, and assistants.

2.—RHETORIC AND COMPOSITION. Two hours, Tuesday and Thursday, at 8, 9, 10:15, 11:15, 3:30, or 4:30. Assistant Professors Lynn, Sisson, and Gardner, and assistants.

3.—ADVANCED ENGLISH COMPOSITION. Study of the principles of discourse, with special reference to the forms used in engineering work, with exercises. Required of Juniors and Seniors in the School of Engineering. 1st term, four hours: Lectures Tuesday and Thursday, at 8; conferences Wednesday and Friday, at 8. Assistant Professors Raymond and Gray.

GEOLOGY.

Professor HAWORTH.

1.—ELEMENTS OF PHYSICAL GEOLOGY. A study of the elementary principles of general geology, including physical conditions throughout geologic time and the formation of continents; nature and origin of the different kinds of rocks and the rock-forming materials; the destructive process of erosion or denudation, and the economic products obtained by the various mining operations. Required of Junior civil and Sophomore mining engineers. 1st term, five hours, at 11:15. Professor Haworth.

4.—ECONOMIC GEOLOGY. A general study of the metallic and non-metallic products of the mine, quarry, and well, considered from a scientific and a practical standpoint, including the nature, origin, amount and geographic and geologic distribution of the same. Must be preceded by elementary chemistry and course 1, or mineralogy 1. Required of Junior mining engineers. 1st term, lectures and library work, three hours, Monday, Wednesday, and Friday, at 9; 2d term, two hours, Tuesday and Thursday, at 10:15. Professor Haworth.

Other courses in geology (the College) are open as optionals to engineering students. For details, see the courses in College section of this catalogue.

MATHEMATICS.

Professor MILLER.

Professor NEWSON.

Associate Professor VAN DER VRIES.

Assistant Professor ASHTON.

Mr. PITCHER.

Mr. MITCHELL.

2.—COLLEGE ALGEBRA. Rapid review of exponents, radicals, and quadratic equations; graphic representation; complex numbers; logarithms; determinants; theory of equations; numeral equations of higher degree. Required of all Freshmen in the School of Engineering. Wentworth's College Algebra, revised edition. Both terms. 1st term, eight sections, three hours, Monday, Wednesday, and Friday, at 8, 9, 11:15, 2:30, or 3:30; 2d term, three sections, three hours, Monday, Wednesday, and Friday, at 11:15 or 2:30.

3.—PLANE TRIGONOMETRY. The six trigonometric functions; principal formulas of plane trigonometry; solution of triangles and practical problems. Required of all Freshmen in the School of Engineering. Miller's Trigonometry. Both terms. Tuesday and Thursday. 1st term, eight sections, two hours, at 8, 9, 11:15, 2:30, or 3:30; 2d term, three sections, two hours, at 11:15 or 2:30.

4.—ANALYTIC GEOMETRY I. The straight line and circle; loci problems. Required of all Freshmen in the School of Engineering. Ashton's Analytic Geometry. Both terms. Tuesday and Thursday. 1st term, two sections, two hours, at 10:15 or 11:15; 2d term, five sections, two hours, at 8, 9, 10:15, 11:15, or 3:30.

5.—CALCULUS I. Differential calculus; fundamental principles; derivatives; applications to geometry and mechanics; maxima and minima; indeterminates; series. Required of all Freshmen in the School of Engineering. Granville's Calculus. Both terms. Monday, Wednesday, and Friday. 1st term, two sections, two hours, at 10:15 or 11:15; 2d term, five sections, two hours, at 8, 9, 10:15, 11:15, or 3:30.

6.—ANALYTIC GEOMETRY II. Conic sections; higher plane curves; solid analytics. Required of all Sophomores in the School of Engineering. Ashton's Analytic Geometry. Both terms. Tuesday and Thursday. 1st term, three sections, two hours, at 10:15; 2d term, two sections, two hours, at 9 or 10:15.

7.—CALCULUS II. Integral calculus; integration; definite integrals; applications to lengths, areas, and volumes. Required of all Sophomores in the School of Engineering. Granville's Calculus. Both terms. Monday, Wednesday, and Friday. 1st term, three sections, three hours, at 10:15; 2d term, two sections, three hours, at 9 or 10:15.

MECHANICS.

Associate Professor H. A. RICE.

Assistant Professor HOOD.

Assistant Professor HUBBARD.

Assistant Professor CORP.

Assistant Professor COCHRAN.

Assistant Professor NEWTON.

1.—MECHANICS. A study of the laws of statics and dynamics. Action of forces upon bodies and the resulting motions. Required of all engineering students. Senior for mining engineers, Junior for all others. 1st term, five hours, at 8 or 9. Associate Professor H. A. Rice.

2.—STRENGTH OF MATERIALS. The theory of resistance to stress and applications to engineering construction. Required of all engineering students. Senior for mining engineers, Junior for all others. 2d term, five hours, at 8 or 10:15. Associate Professor H. A. Rice.

3.—TESTING OF MATERIALS. A laboratory course to accompany course 2. The testing of iron, steel, wood and other materials of construction for resistance to tension, compression, torsion, bending, and shearing. Experimental determination of the limits of safe loading. The testing of paving brick. For all engineering students. Senior for mining engineers, Junior for all others. 2d term, four hours, Monday, Tuesday, Thursday, Friday, or Saturday. Assistant Professors Hood and Corp.

4.—HYDRAULICS. A study of the laws governing the pressure and flow of liquids and gases and the force of and resistance to their motion. Required of civil and mechanical and optional for mining engineering students. Senior, 1st term, (a), four hours, at 10:15. Assistant Professor Hubbard.

5.—HYDRAULIC LABORATORY. A course to accompany course 4 and the course in hydraulic machinery. Experimental work with the flow of water over weirs, through orifices and pipes, and in testing hydraulic machinery. Required of civil and mechanical engineering students. Senior, 1st term, two hours, Monday, Wednesday, or Friday, 3:30 to 5:30. Assistant Professor Corp.

6.—ELEMENTARY MECHANICS. An elementary course, requiring a knowledge of elementary physics and trigonometry. Freshman, 1st term, two hours, Tuesday and Friday, at 8, 9, 11:15, 3:30, or 4:30. Assistant Professors Hood, Cochran, and Newton.

MECHANICAL DRAWING.

Assistant Professor HOOD.

Assistant Professor NEWTON.

Assistant Professor COCHRAN.

1.—FREE-HAND DRAWING. Outline drawing with lead-pencil. Drawing of simple geometrical figures for hand and eye training. Drawing from the object, teaching accuracy in observation. Required of all engineering students. Freshman, first six weeks of 1st term, six hours. Assistant Professors Hood, Cochran, and Newton.

2.—ELEMENTARY MECHANICAL DRAWING. Accurate drawing of geometrical figures, teaching proper use of instruments. Drawing-board constructions for conic sections and other plane curves. Standard forms of lettering for titles. Continual practice in single-stroke free-hand lettering for notes on drawings. Required of all engineering students. Freshman, last fourteen weeks of 1st term, six hours. Assistant Professors Hood, Cochran, and Newton.

3.—DESCRIPTIVE GEOMETRY. Principles of projection. Execution of a number of original exercises. Required of all engineering students. Freshman, 2d term, three hours, Monday, Wednesday, and Friday, at 8, 9, 10:15, 11:15, 3:30, or 4:30. Assistant Professors Hood, Cochran, and Newton.

4.—PROJECTION DRAWING. Construction of problems in projections, sections, intersection of surfaces, development of surfaces, isometric drawing. Dimensioning of drawings with special reference to methods used in practice. Parallel with course 3. Required of all engineering students. Freshman, 2d term, six hours. Assistant Professors Hood, Cochran, and Newton.

MECHANICAL ENGINEERING.

Professor WALKER.

Assistant Professor CORP.

Assistant Professor ———.

1.—MACHINE DRAWING. Drawing of machine details from sketches and copy; sketching of machine parts and preparation of working-drawings; tracing and blue-printing; notes and lectures on drafting-room methods. Sophomore, 1st term, for electrical, mechanical, mining and chemical engineering students. Detailing of machines from sketches, notes, and assembled drawings. Each student prepares complete drawings for some simple machine. Sophomore, both terms, for electrical and mechanical engineering students. Six hours per week during the year, Monday and Wednesday, or Tuesday and Thursday, 1:30 to 4:30. Assistant Professor ———.

2.—MECHANICS OF MACHINERY. (a) A study of the forces pro-

duced in the operation of machine tools, hoisting machinery, and cranes. Lectures and recitations. (b) Mechanics of the steam-engine. The engine mechanism; valve motion; valve designing; analysis of forces due to steam pressure; crank effort diagrams and fly-wheel design. Recitations and many practical problems. Text, Halsey's Valve Gears, and Dalby's Balancing of Engines. Junior, 2d term, three hours, Monday, Wednesday, and Friday, at 9. Professor Walker.

3.—KINEMATICS. A study of the motion of machine parts and of methods of transmission of motion by gears, belts, cams, etc. A drawing-room course. Six hours. Text, Barr's Kinematics of Machinery. Junior, 2d term, Tuesday, Thursday, and Saturday, 8 to 10. Assistant Professor ———.

4.—MACHINE DESIGN. Designing and drawing of simple machine members, followed by the complete design of some metal-working machine. Students wishing to specialize in steam-power generation may substitute chemistry for this work during the second half-term. One hour lecture and five hours drawing. For students not taking course No. 8, one hour lecture and four hours drawing. Text, Kent's Mechanical Engineer's Handbook. Senior mechanical students, 1st term, Monday and Wednesday, 2:30 to 5:30. Senior electrical students, Tuesday and Thursday, 8 to 10, and Friday, at 1:30. Professor Walker and Assistant Professor ———.

5.—DESIGNING. Students specializing in power development will design either a steam-engine or a gas-engine, making complete drawings. Others will prepare plans for some type of shop or factory building involving steel construction, and including the design of a traveling crane for the handling of material. Senior, 2d term, eight hours, Monday and Thursday, 1:30 to 5:30. Professor Walker.

6.—BOILERS AND STEAM-ENGINES. Types of boilers and engines; principles of operation and construction; care and management; a careful study of the methods of construction; boiler and engine accessories; power of the engine; use of the engine indicator. Recitations, lectures, and one-half day in the engineering laboratory. Text, Spangler's Elements of Steam Engineering. Sophomore, 2d term, three hours, Monday, Wednesday, and Friday, at 10:15. Assistant Professor ———.

7.—ENGINES AND BOILERS. Types of engines; valve motions; governors; dynamics of moving parts; indicator and cylinder analysis; accessories and connections. Boilers: General construction, care, and management; accessory apparatus; fuels. Lectures, recitations, and five half-days in the engineering laboratory. Must

be preceded by physics 1 and 2. Required of civil engineering students. Junior, 2d term, five hours, at 11:15. Assistant Professor Corp.

8.—GENERAL MACHINE DESIGN. Proportioning and designing machine parts, fastenings, etc., for durability and strength; designing of gears, belt and rope transmission systems, shafting, shrink and forced fits, shaft couplings, fly-wheels, cylinders, and riveted joints. Recitations and problems. Text, Jones's Machine Design, vol. II. Senior, 1st term, three hours, Monday, Wednesday, and Friday, at 9. Assistant Professor Corp.

9.—THE GAS-ENGINE. Power, efficiency and economy of the gas-engine; study of the forces produced by gas pressure and inertia; structural design. Recitations and lectures. Text, Lucke's Gas-engine Design. Senior, 1st term, two hours, Tuesday and Thursday, at 9. Professor Walker.

10.—HYDRAULIC MACHINERY. A study of types of pumping machinery, with special reference to city water-supply, sewerage and irrigation plants. The questions of first cost and maintenance of plant and economy in operation are fully discussed. Also a study of water-power development and methods of designing turbines. Lectures, assigned reading, and reports. Senior, 1st term, (b), four hours, at 10:15. Professor Walker.

11.—THERMODYNAMICS. Study of the relations of heat phenomena. Theory of gases and vapors. Theory of heat engines and discussion of heat efficiencies. Must be preceded by physics 1 and 2 and calculus. Lectures, recitations, and problems. Texts, Reeves's Thermodynamics. Senior, 1st term, four hours, at 11:15. Professor Walker.

12.—ADVANCED STEAM ENGINEERING. Study of heat losses in the steam-engine, with methods of reducing the same; compounding; superheating; jacketing; design of reciprocating engines; the steam jet; form of nozzle for adiabatic jet; design of the steam-turbine. Recitations and lectures. Texts, Thomas's Steam Turbines, Reeves's Thermodynamics, and Kent's Mechanical Engineer's Handbook. Senior, 2d term, three hours, Tuesday and Thursday, at 8 to 10. Professor Walker.

13.—ENGINEERING PRACTICE. Power-house equipment and construction. Power development by water, steam and gas considered in relation to adaptability. Application of power to machinery by mechanical and by electrical transmission compared with reference to economy. Influence of modern methods on cost of manufacturing. Senior, 2d term, (a), four hours, at 11:15. Professor Walker.

14.—ENGINEERING LABORATORY. (a) Theory and use of planimeters; calibration of apparatus; cement testing; valve setting; (b) For Senior electricals, efficiency tests of steam-boiler and engine injector, and gasoline-engine, with complete thermal analysis. For Junior mechanicals, flue-gas analysis, proximate analysis of coal, coal calorimetry, and tests for physical properties of lubricating oils. 1st term, four hours, Tuesday or Thursday, 1:30 to 5:30. Assistant Professor Corp.

15.—ENGINEERING LABORATORY. Complete testing of lubricants; fuel calorimetry; efficiency tests of steam-boiler, engine (with Hirn's analysis), steam-pump, gasoline-engine, and air-compressor. Chart study of steam-plant efficiency. Special subjects for investigation are assigned, to test the student's capacity for original work. Senior, 2d term, four hours, Wednesday, 1:30 to 5:30. Professor Walker.

16.—MECHANICS OF MACHINERY. A brief course for electrical students, covering, in a general way, the subjects mentioned in courses 2, 9, and 12. Junior, 2d term, three hours, Monday, Wednesday, and Friday, at 8. Professor Walker.

17.—THESIS WORK. Senior, 1st term, Friday, 1:30 to 3:30; 2d term, Friday, 1:30 to 5:30. Professor Walker.

SUMMER VACATION WORK. Two months to be spent in regular work in some shop or manufacturing plant of good standing. A report on this work, with a certified statement from the shop foreman or the superintendent, must be presented before credit can be given.

For courses open to graduate students, see elsewhere in this catalogue.

MINERALOGY.

Assistant Professor KAY.

1.—ELEMENTARY MINERALOGY I. A brief course in crystallography, blowpipe analysis, and systematic mineralogy, consisting of lectures and laboratory work as follows: *Crystallography*.—A study of the properties of crystals and the crystal systems, with laboratory exercises, using natural crystals and crystal models. Considerable work is required in drawing crystal forms and measuring crystal angles. Moses and Parsons's Text-book on Mineralogy will be used. *Chemical Mineralogy*.—In blowpipe analysis sufficient practice is required to familiarize the student with all the ordinary blowpipe tests for mineral identifications. *Physical Mineralogy*.—The student is required to become thoroughly familiar with the methods of identifying all the more common minerals by their physical characters, such as crystalline form, cleavage, grav

ity, luster, streak, hardness, and color. The uses, localities and productions of the minerals of economic importance are discussed. Required of mining and chemical engineers, Sophomore. Open to Juniors and Seniors who have had chemistry through qualitative analysis. It may also be used for a graduate credit, provided some extra time is given to it. Sophomore, 2d term, ten hours, 3:30 to 5:30. Assistant Professor Kay.

METALLURGY.

Assistant Professor McFARLAND.

19.—METALLURGY I. General metallurgy and metallurgy of iron and steel. Properties of metals and alloys, metallurgical terms and processes, furnace types, refractory materials and slags, fuels and thermal measurements, calculation of furnace charges, etc., followed by a study of iron and its ores; methods for manufacture of pig iron and wrought iron; manufacture of steel by crucible, Bessemer and open-hearth processes; special steels and special processes; heat treatment and metallography of steel. Must be preceded by chemistry 3. Required of mechanical engineers, Junior, and chemical engineers, Senior; optional in the College and for mining engineers, Senior. 1st term, five hours, daily, at 11:15. Assistant Professor McFarland.

20.—METALLURGY II. Metallurgy of lead, zinc, and copper, followed by metallurgy of silver, gold, mercury, and tin. Study of principal ores and methods of extraction and refining, amalgamation, chlorination and cyanide processes, pyritic smelting, etc. Must be preceded by chemistry 4. Required of mining engineers. Senior; optional in the College and for chemical engineers, Senior, 2d term, five hours, daily, at 11:15. Assistant Professor McFarland.

21.—METALLURGICAL LABORATORY. Three hours. (Two 3-hour periods.) By appointment. Either term. This course includes (a) Temperature measurements by thermo-electric, optical and fusion pyrometers, with calibration of instruments; (b) Preparation of slags and alloys, with a study of the relation of composition to structure, fusibility and other properties; (c) Study of roasting, reduction and oxidation reactions used in metallurgical processes; (d) Amalgamation, chlorination, cyaniding, and leaching; (e) The testing of ores to determine the proper metallurgical treatment. Optional. Open to Juniors, Seniors and graduate students who have taken or are taking Metallurgy I or II. Assistant Professor McFarland.

MINING ENGINEERING.

Professor HAWORTH.

Associate Professor YOUNG.

COURSES FOR UNDERGRADUATES ONLY.

1.—MINING. (a) *Excavating, Boring, Blasting, and Surveying.*

Excavation: Excavation of various kinds of earth, such as soils, clays, sands, and rocks, with or without ground-water; quarrying stone, etc., with various kinds of tools and machinery employed for same. Boring: Methods and appliances for prospect drilling for various deposits and for drilling oil-wells and gas-wells, including different varieties of tools and machinery employed, difficulties to be encountered, and the desirability of projecting under various conditions. Blasting: A study of the various kinds of explosives used in mining and excavating, such as black powder and the various kinds of the nitroglycerines and other explosives, including their manufacture, properties and modes of use, and precautions necessary in handling them. Mine surveying: General principles of underground surveying and relation between underground and surface surveys; the construction of mine maps and mine sections, and measurements required in connection with contracts and location of new works. To be supplemented by field-work during summer vacation.

(b) *Shafting, Tunneling, and Mine Support.* Shafting: Shaft sinking; methods employed in sinking shafts through soft and hard materials, dry or water-bearing, including the hoisting and handling of excavated material, and methods of shaft timbering and shaft lining. Tunneling: Methods of driving tunnels through different kinds of earth and rock, including drainage and ventilation, tunnel supports and linings, and methods of choosing locations for tunnels. Mine supports: Including a general study of the various methods of supporting all forms of underground openings by timbers, masonry, metallic linings, and other methods peculiarly adaptable to special conditions. Lectures and recitations. Foster's *Ore and Stone Mining*, revised by Brough, will be used as a reference book. Required of mining engineering students. Junior, 1st term, five hours, at 8. Associate Professor Young.

2.—ORE DRESSING. General methods and theories for separating different ores from foreign materials and for washing coals, clays and other products. It includes a study of hand dressing, crushing, screening and jigging, and a study of the machinery for the same; the concentration of slimes; milling methods for gold and silver ores. Recitations, lectures and laboratory work. Richard's *Ore Dressing* will be used as a text book. Required of mining en-

gineering students. Junior, 1st term, two hours, Tuesday and Thursday, at 9; second term, three hours, Monday, Wednesday, and Friday, at 10:15. Associate Professor Young.

3.—POWER EXTRACTION, DRAINAGE AND VENTILATION. Power: Generation and transmission of power, including a study of steam, compressed air and electricity, as applied to mining. Also the development of power from water, with a study of the laws governing the flow of water and the measurement of streams. Extraction: Machinery and methods used in handling minerals on the surface and under-ground; tramways, cars, propelling forces; methods of loading and unloading cars; methods of storing mine products. Drainage: Sources, amount and character of mine waters, and methods of controlling the same; mine drainage by natural and artificial methods; water supply; inundations, and modes of escape from inundated mines. Ventilation: under-ground gases and gases produced by blasting and other mining operations; methods of ventilation; mine explosions of fire-damp and dust; mine fires; relief and rescue in case of accident. Required of mining engineering students. Senior, 1st term, five hours, at 10:15. Associate Professor Young.

4.—PROSPECTING, EXPLORING, DEVELOPING, AND THE EXPLOITATION OF MINERAL PROPERTIES. A study of the best methods of prospecting, developing, sampling and working mines. Required of mining engineering students. Senior, 2d term, (a) five hours, at 11:15. Associate Professor Young.

5.—MINE PLANT; MINE CONSTRUCTIONS: (a) *Mine Plant*. A study of the various kinds of machinery employed in mine development and mine operation, and methods of placing the same, including machinery required for drilling, blasting, hoisting, drainage, and mine ventilation; and a study of large mining plants in the United States and abroad. Required of mining engineering students. (b) *Mine Constructions*. Building materials, foundations, mine building and constructions, with special reference to mine work. Optional for mining engineering students. Senior, 2d term, five hours, at 9. Associate Professor Young.

6.—MINE ADMINISTRATION. Mine accounts and management; care of sick and injured in case of accident; rules and regulations for equipping expeditions and maintaining camps. Optional for mining engineering students. Senior, 1st term, (a), five hours, by appointment. Associate Professor Young.

7.—PROFESSIONAL THESIS. Before graduation a thesis will be required of each student, embodying an elaborate description of

some phase of mining or metallurgical processes, or of ore formation, or a description of the mineralogy or geology of some mining locality. It is presumed that material will largely be gathered for thesis work during the summer vacation excursions, but ideal plants may be constructed or mines developed in exceptional cases. The thesis work will be under the supervision of the department of geology and mining. It should be begun during the first term of the Senior year. A typewritten copy of the thesis, conforming to the standard of the engineering school, must be presented to the head of the department of geology and mining not later than May 15, and must be approved by the head of the department before graduation.

8.—SUMMER EXCURSION WORK. Before graduation each student is required to give evidence of having had some practical experience in some phase of mining operations, equal in extent to what might be acquired in six weeks' special study of one or more good mining plants or mining locations. This knowledge may be gained: first, by a summer school or excursion to some well known mining locality and a careful investigation of mining methods, ore deposits and smelting processes, etc.; or second, by seeking employment in practical work of such a nature that the desired amount of knowledge and skill may be acquired.

The first presumes a body of students, accompanied by an instructor, will devote sufficient time to the subject during the summer vacation between the Junior and Senior years. Students choosing the second method should consult with their instructor in advance and have outlined to them the ground necessary to be gone over in order that they may make observations more carefully.

MODERN FOREIGN LANGUAGES.

The course in French, German or Spanish to be taken by engineering students during the Freshman year can only be determined after consultation in individual cases, the choice depending upon the particular language or grouping of languages offered for entrance. In general, one offering three units of Latin may begin any one of the above-named languages. One offering one or more units of French or German will find opportunity to continue such language.

PHYSICS.

Professor HILL.

Assistant Professor STIMPSON.

7.—MECHANICS, SOUND, AND HEAT. A fundamental course of experimental lectures and recitations. Required of all engineering students. 1st term, four hours, at 11:15; laboratory two hours. Professor Hill and Assistant Professor Stimpson.

Prerequisites: Plane trigonometry and analytical geometry.

8.—ELECTRICITY, MAGNETISM, AND LIGHT. Continuation of physics 7. Required of all engineering students. 2d term, four hours, at 11:15; laboratory two hours. Professor Hill and Assistant Professor Stimpson.

Prerequisites: Plane trigonometry, analytics, and calculus.

SHOP WORK.

Mr. WARD.

Mr. JONES.

Mr. HANSON.

Required of electrical and mechanical engineering students through the first three years of their course and all other engineering students throughout the Freshman and Sophomore years. Total hours per term, seventy-eight.

1.—Forging, welding and working iron at proper heat. Making steel tools, and tempering. Freshman, 1st or 2d term, five hours. Mr. Hanson.

2.—Use of hand wood tools; sharpening; the lathe and pattern-turning; pattern-making, core boxes, draft, shrinkage, finish, etc.; selection of woods; exercises and working from special designs. Freshman, 1st or 2d term, five hours. Mr. Jones.

3.—Filing, chipping, scraping, drilling, babbitting, and thread-cutting. Sophomore, 1st term, five hours. Mr. Ward.

4.—Lathe work: Turning cylinders, tapers, curves, and cutting threads. Sophomore, 2d term, five hours. Mr. Ward.

5.—Lathe work: Turning to close fit; eccentric and special thread cutting. Junior, 1st term, five hours. Mr. Ward.

6.—Lathe, planer and milling-machine work. Boring, reaming and shaping to special design. Tool-making, hardening, and grinding. Junior, 2d term, five hours. Mr. Ward.

V. THE SCHOOL OF FINE ARTS.

FACULTY.

FRANK STRONG, Ph. D., President.

CHARLES S. SKILTON, A. B., Dean. Professor of History of the Fine Arts, Musical Theory, and Organ.

CARL A. PREYER, Professor of Piano, Musical Theory, Counterpoint, Canon, and Fugue.

CHARLES E. HUBACH, Professor of Voice.

WILLIAM A. GRIFFITH, Professor of Drawing and Painting.

ALEXANDER M. WILCOX, Ph. D., Professor of Greek Language and Literature.

CHARLES G. DUNLAP, Litt. D., Professor of English Literature.

EDWIN M. HOPKINS, Ph. D., Professor of Rhetoric and English Language.

ARVIN S. OLIN, A. M., Professor of Education.

EUGENIE GALLOO, A. M., Professor of Romance Languages and Literatures.

BRUCE V. HILL, Ph. D., Acting Professor of Physics.

RAPHAEL D. O'LEARY, A. B., Associate Professor of English.

ELMER F. ENGEL, A. M., Associate Professor of German.

EDGAR G. FRAZIER, Ph. B., Associate Professor of Public Speaking.

ARCHIBALD HOGG, A. B., Assistant Professor of Philosophy.

ALBERTA L. CORBIN, Ph. D., Assistant Professor of German.

MARGARET LYNN, A. M., Assistant Professor of English.

CHARLES H. GRAY, Ph. D., Assistant Professor of English.

MARY C. FISH, Assistant Professor of Physical Education.

HARRIET GREISSINGER, Mus. B., Assistant Professor of Piano.

BLANCHE LYONS, Assistant Professor of Voice.

HELEN PHIPPS, Instructor in Violin.

MAUDE B. COOKE, Assistant in Piano.

MAUDE MILLER, Mus. B., Assistant in Piano.

JULIA RICHTER, Mus. B., Assistant in Piano.

LOUISE WEIDEMANN, Mus. B., Assistant in Piano.

AUGUSTA FLINTOM, Mus. B., Assistant in Voice.

ALFRED BUCH, Instructor in Violoncello.

DEPARTMENTS.

The School of Fine Arts is made up of the following departments: (1) Music. (2) Drawing and Painting. (3) Elocution.

DEGREES.

The courses of study in the School of Fine Arts lead to the following degrees:

Master of music.

Bachelor of music.

Bachelor of painting.

Teacher's certificate of completion of two-year course.

REQUIREMENTS FOR ADMISSION.

There are two methods of admission to the School of Fine Arts: First, by examination; second, by certificate:

BY EXAMINATION. All students who cannot present certificates from accredited schools will be examined in the subjects required for entrance. The times and place of examination are set forth on page 73 of this catalogue.

BY CERTIFICATE. Students will be admitted without examination on certificates from high school or other preparatory school, signed by the proper school officer. The general plan is the same as that noted under "The College."

UNITS REQUIRED FOR ADMISSION.

Eight and one-half units of high-school work are required for full admission to the School of Fine Arts. (See heading "Special Students.") The eight and one-half units must include the following:

Three units in English from group I.

Two and one-half units in mathematics from group II.

One unit in history from group VI.

Two units from any courses remaining, as outlined in the following:

SUBJECTS OFFERED.

GROUP I, English.	{ English, four units.	{ Three units are required.
GROUP II, Mathematics.	{ Algebra, one and one-half units. Plane geometry, one unit. Solid geometry, one-half unit. Plane trigonometry, one-half unit. Advanced algebra, one-half unit.	{ The algebra, one and one-half units, and plane geometry, one unit, are required.

GROUP III, Foreign Languages.	$\left\{ \begin{array}{l} \text{Latin, four units.} \\ \text{Greek, three units.} \\ \text{German, three units.} \\ \text{French, three units.} \end{array} \right.$	$\left\{ \begin{array}{l} \text{All optional, except that} \\ \text{students who take} \\ \text{German in the Uni-} \\ \text{versity must offer} \\ \text{three units of Latin} \\ \text{for entrance.} \end{array} \right.$
GROUP IV, Physical Sciences.	$\left\{ \begin{array}{l} \text{Physical geography, one} \\ \text{unit.} \\ \text{Physics, one unit.} \\ \text{Chemistry, one unit.} \end{array} \right.$	$\left\{ \begin{array}{l} \text{All optional.} \end{array} \right.$
GROUP V, Biological Sciences.	$\left\{ \begin{array}{l} \text{Botany, one unit.} \\ \text{Zoölogy, one unit.} \\ \text{Physiology, one unit.} \end{array} \right.$	$\left\{ \begin{array}{l} \text{All optional.} \end{array} \right.$
GROUP VI, History.	$\left\{ \begin{array}{l} \text{Greek and Roman, one} \\ \text{unit.} \\ \text{Mediæval and modern,} \\ \text{one unit.} \\ \text{English, one unit.} \\ \text{American, one unit.} \\ \text{Economics, one unit.} \end{array} \right.$	$\left\{ \begin{array}{l} \text{One unit is required.} \end{array} \right.$

ADDITIONAL REQUIREMENTS.

IN VIOLIN. Applicants must add to the general requirements stated above an ability to play correctly selections from the Wichtl School, book I, and from Kayser, Thirty-six Studies, book I.

IN PIANO AND ORGAN. In addition to the technical requirements, consisting of the major and the harmonic and melodic minor scales, the triad, dominant seventh and diminished seventh arpeggios, candidates will be required to play in tempo, and with correct touch, fingering, and phrasing, selections from the following, or equivalents: Loeschorn, op. 66; Bach's Easy Preludes; Heller, op. 47; Mozart, Sonata in A major, or equivalents.

IN VOICE. Applicants for the regular course in voice must be able to play piano accompaniments of moderate difficulty. Any deficiency in this respect must be made up by private lessons.

IN LATIN. All students expecting to take German in the regular course must offer three units of Latin.

SPECIAL STUDENTS.

Students need not be deterred from seeking to enter the School of Fine Arts of the University because they cannot satisfy all the requirements for full admission to that school. Those requirements are for persons who are candidates for a degree in music or painting. All persons who desire to pursue a special line of work, without conforming to the requirements for entrance, or following

a prescribed course, may apply for admission to the School of Fine Arts as special students. The admission of such persons is under the control of the Dean, to whom they should apply, and whose certificate of acceptance must be presented to the Registrar before registration.

Applicants for standing as special students must present satisfactory evidence of proper preparation for the studies desired. Special students are subject to the same regulations as regular students as to quality of work, attendance at recitations, and examinations, if they desire credit toward a degree.

ENSEMBLE PLAYING.

An ensemble class meets for the study of concerted music. Four- and eight-hand piano music studied, and trios are played with violin and violoncello. Thus pupils become acquainted with many masterpieces which are often inaccessible to music students, and acquire habits of sight-reading and accompanying, which are invaluable to the musician. Advanced students also have the opportunity of playing concertos with the University Orchestra.

CLUBS.

THE UNIVERSITY ORCHESTRA is an organization of students, directed by the Dean, which gives two concerts each year, furnishes music for commencement and other occasions, and accompanies the annual performance of opera.

Classical and popular music is studied. All students who play orchestral instruments with sufficient skill are eligible.

THE GLEE CLUB is composed of young men, under the direction of the professor of voice training. They give two concerts a year, and make a concert tour of the state.

VESPER CHORUS. The Vesper Chorus is composed of about thirty of the leading singers of the city and University, and takes part in the monthly vesper services on Sunday afternoon. It is under the direction of the professor of voice training.

THE MANDOLIN CLUB is composed of mandolin, banjo and guitar players, under a leader elected by the members. It gives two concerts a year, and makes a concert tour.

THE FESTIVAL CHORUS is an organization of students and singers from the city, numbering about one hundred, under the direction of the Dean, which meets once a week during the second term to prepare the oratorios and cantatas for the May music festival.

OPERA. The voice students give an annual performance of opera under the direction of the instructors in voice and elocution, accompanied by the University Orchestra.

THE NORMAL CLASS.

The normal class is designed especially for students fitting themselves for teachers, although all students of the school are required to attend. The work consists of lectures on the methods of teaching; papers and discussions by students; careful study of the systems in use in the school, which, in music, aim equally to combine the melodic and musical elements with that of the technical; the examination of other systems, always with a view of shortening the processes and roads to a high grade of musical execution. Once a month the conference is devoted to a discussion of current events.

PAYMENT OF TUITION.

No student will be accepted for less than a half-term.

The receipt of the treasurer of the School of Fine Arts must be presented to secure enrolment in classes or for private lessons at the beginning of each quarter. No reduction is made for lessons missed except in case of illness, when the School of Fine Arts shares the loss equally with the pupil.

GENERAL.

It is required of all candidates for a degree that the last two years be spent in residence at the University.

During the first year piano students will take their lessons from an assistant. If Professor Preyer's time is not fully occupied, he will give one lesson a week to the most advanced Freshmen. During the second year, piano students will take one lesson a week from Professor Preyer and one from an assistant, and attend technical class with an assistant; in the third and fourth years, all piano lessons are with Professor Preyer.

Voice students may take their lessons during the first two years either with Professor Hubach or Mrs. Lyons. In the last two years all voice lessons are with Professor Hubach.

The year is divided into four quarters, two quarters in each term.

The school does not furnish pianos for practice at the building, excepting a piano with organ pedals, but instruments can be rented in town for from three to five dollars a month, and grand pianofortes at from seven to ten dollars a month. Pianos rented of private parties, or in connection with board, may often be secured

at even lower rates. If desired, several students may unite in renting an instrument, thus materially reducing the expense.

Students in drawing and painting will be required to furnish their own materials, except easels and drawing-boards.

All art work, when finished, is under the control of the instructors until after the close of the public exhibition of student work, at the end of the academic year.

EQUIPMENT.

IN MUSIC. The department of music of the University occupies a building of its own—North College. The down-town music studios, in the Dick building, are used by the assistant instructors. The school is well equipped with pianos, including six concert grands; a three-manual pipe-organ, built by King & Sons, Elmira, N. Y.; a piano with organ pedals; charts for sight-reading, for illustrating vocal, pianoforte and lecture courses; about 100 lantern slides for use in connection with lectures in architecture, the graphic arts, and musical history.

IN DRAWING AND PAINTING. The department of drawing and painting offers instruction in free-hand drawing in charcoal, pencil, and pen and ink; painting in oil and water-colors from still life, the living model, and landscape; ornamental design, perspective, and pictorial composition.

THE STUDIOS are located on the third floor of Snow Hall, and are well equipped with plaster casts from the antique, articles from still life, books and photographs upon the fine and applied arts.

THE GREENHOUSE is on the same floor, and here plants are cultivated for the use of the class in ornamental design.

One of the studios can be darkened for a lecture-room. It is equipped with a lantern and several hundred slides.

There is a force-press for the printing of etchings and another for color-printing. The students have the use of these presses for the reproduction of their designs.

The mounted natural-history specimens furnish a great deal of valuable material for the students in painting and motifs for the classes in design.

In the studios there are sixty-five casts, among which will be found the Nike of Samothrace; Venus di Milo; Diana Robing; Augustus Cæsar; Tomb of Lorenzo de Medici, by Michael Angelo; Nike, by Praxiteles; several Panagra figures; three Lions, by Barye; Satyr and Narcissus, from Pompeii; Laughing Faun, in the Louvre; Clytie, from the British Museum; Minerva; Sappho; Laughing Boy, by Donatello; Maiden of Lilli, attributed to Ra-

phael; Dante; the Unknown Woman, in the Louvre; Washington and Franklin, by Houdon; the large Bacchic Procession, from the Naples museum; Bacchante, from the Villa Albani, Rome; Boys playing on trumpets, by Luca della Robbia; Madonna and child, with two angels, and the Annunciation, by Andrea della Robbia; Cherub playing on double pipe, by Donatello; Nymph, by Jean Goujon; French Peasant, by Carpeaux; the head of Cæsar, from the Trajan column; busts of Brutus, Agrippa, Apollo Belvedere; also, a number of studies of ornament and architectural details.

Pupils will have access to the classical museum, containing a good collection of antique casts—in the round, including the Venus di Milo, the Borghese Warrior, the Emperor Augustus, the Reclining Young Man of the East Pediment of the Parthenon, and the so-called Germanicus; in relief, parts of the frieze of the Parthenon, a part of a Bacchic Procession, three plates in high relief, Metopes of the Parthenon, etc.

Busts of Young Augustus, Niobe, Apollo Belvedere, Clytie, Eros, Homer, Socrates, Cicero, and many of Roman emperors.

Masks of Brutus, Niobe, Laocoon, and Agrippa.

Small full figures of Venus di Milo, Diana Robing, and Narcissus.

Models of the Acropolis of Athens, the Quoit Thrower of Myron, Amazon Antinous, Diana of Gabii, and others; colored charts of Greek and Roman architecture.

PLATES. Seventy colors, by Reinhard, illustrating Roman architecture; 89 plates of forms, painting and decoration of Greek vases; 471 plates illustrating Greek and Roman antiquities; 100 plates illustrative of art mythology; 2000 illustrations of classical monuments; manuscript facsimiles, inscriptions, etc.; phototypes of sculpture and photography.

THE LIBRARY. The University Library contains a good collection of works on art, including art exposition and criticism, musical history, vocal and orchestral scores of operas, symphonies, chamber music, oratorios and cantatas, pianoforte and organ music, and collections of standard merit. This collection is annually increased.

CONCERTS AND RECITALS.

Concerts are frequently given in Recital Hall and in University Hall by the professors and advanced students. Concert courses which are arranged for at the University, and the nearness of Lawrence to Kansas City and Topeka, afford students an opportunity to hear many noted musicians. Special rates are secured for these events.

Recitals are given monthly by the students of the school, at

which works studied in the classroom are performed before a small audience of fellow students and their friends. Every student is required to attend these recitals and all concerts, and take part in the programs at least twice a year, and to present each term a record of attendance. These semipublic appearances are of great assistance in acquiring the ease and self-possession so essential to a successful public performance.

Towards the end of the College year a musical festival of two days' duration is given, in which a leading orchestra and noted soloists take part with the Festival Chorus, and several masterpieces of choral and orchestral music are rendered.

ART EXHIBITIONS.

An exhibition of works of art will be held every year at the University, together with a course of lectures upon subjects relating to the fine arts. Exhibitions of the work of the students are held from time to time.

EXPENSES.

By legislative enactment, a matriculation fee of five dollars (to be paid but once) must be charged each student of Kansas entering the School of Fine Arts. Non-residents of Kansas must pay a matriculation fee of ten dollars.

The instructors in the School of Fine Arts receive compensation from the state for only part of the work of the courses, and the remainder must be paid for at rates indicated below.

All bills are payable quarterly in advance.

No fees will be refunded if the student leaves before the end of a half-term. The receipt of the treasurer of the School of Fine Arts must be presented each quarter to secure enrolment in classes or for private lessons. No lessons are given during the week of the semiannual examinations.

Rates for regular students (two half-hour lessons a week):

First year.....	Piano, per quarter, one lesson with Professor Preyer	\$31 00
	Piano, per quarter, lessons with assistants..	25 00
	Voice, per quarter	31 00
	Violin, per quarter	25 00
	Violoncello, per quarter	25 00
	Elocution, per quarter.....	31 00
	Drawing and painting, per quarter	15 00
Second year...	Rates the same as for first year.	

Third year	Piano, per quarter.....	\$33 50
	Organ, per quarter.....	33 50
	Voice, per quarter.....	31 00
	Violin, per quarter.....	31 00
	Violoncello, per quarter.....	31 00
	Drawing and painting, per quarter.....	15 00
Fourth year...	Free to Kansas students. For non-residents, the same as for the third year.	

RATES FOR SPECIAL STUDENTS.

Preliminary years and private lessons with assistants:

Piano, two lessons a week, per quarter.....	\$13 50 and	\$18 00
“ one lesson a week, per quarter.....	9 00 and	7 00
Voice, two lessons a week, per quarter.....		18 00
“ one lesson a week, per quarter.....		10 00

Lessons with heads of departments (one-half-hour lessons):

Piano, two lessons a week, per quarter.....	\$28 00
“ one lesson a week, per quarter.....	16 00
Voice, two lessons a week, per quarter.....	28 00
“ one lesson a week, per quarter.....	16 00
Organ, two lessons a week, per quarter.....	28 00
“ one lesson a week, per quarter.....	16 00
Violin or violoncello, two lessons a week, per quarter...	24 00
“ “ one lesson a week, per quarter....	12 00
Harmony, counterpoint, composition, instrumentation—	
Per quarter.....	28 00
In class.....	10 00
Elocution, two lessons a week, per quarter.....	28 00
“ one lesson a week, per quarter.....	16 00

Three lessons a week (hour lessons):

Painting, in class.....	15 00
Drawing, Saturday class, eighteen weeks.....	7 50
Physical education, private.....	25 00
“ “ in class.....	5 00

OTHER EXPENSES. There are no dormitories connected with the University. Students find accommodations in the boarding-houses and homes of Lawrence. Information concerning the location of rooming- and boarding-places may be had at the office of the Registrar.

The average price of board, rooms, light and fuel may be placed at \$4 a week. Some persons who furnish plain rooms and good, plain food receive students at \$3 a week. Day board in private families and at city restaurants may be obtained for \$2.75 to \$4 a week. Day board in clubs varies from \$2.50 to \$3 a week. Furnished rooms, usually occupied by two students, range from \$4 to \$15 a month. Unfurnished rooms rent for \$1.50 to \$3 a month. Students who can supply their own furniture and buy and prepare provisions for the table themselves can attend the University for very little cost in money.

WHAT THE SCHOOL OFFERS.

IN MUSIC.

Instruction in piano, organ, violin and violoncello playing, and in singing.

Opportunities for performing in public at small recitals and large concerts.

Opportunities for hearing frequent concerts of all kinds of music, and many noted artists.

Opportunities for taking part in practice of an orchestra and chorus.

A complete knowledge of the theory and history of music.

Training in methods of teaching.

Contact with the life of a large university.

Access to a large musical library.

PIANO STUDENTS are trained not only in solo playing, but in duets, duos, quartets, and ensemble playing with orchestral instruments. Advanced players have the opportunity of playing concertos with the University Orchestra. A special course of piano recitals is given each year for the benefit of piano students.

ORGAN STUDENTS have the opportunity of practicing on the three-manual electric pipe-organ in University Hall. Students can also arrange to practice on the organ of the church which they attend. Nearly all of the church organs in Lawrence are played by former students of this department, and advanced players will find no difficulty in securing positions.

VIOLIN AND VIOLONCELLO STUDENTS, when sufficiently advanced, receive training in ensemble playing with piano and other instruments, and are admitted to the University Orchestra. Advanced students receive instruction in conducting the orchestra.

VOICE STUDENTS, aside from their solo work, have the opportunity of singing in the church choirs of the city, in the University Glee Club, Vesper Chorus, and Festival Chorus. Each year the musical people of the University give a public performance of an opera.

THEORY STUDENTS receive a complete training in the art of composition in all the different forms of music, and have the opportunity of hearing their compositions performed, when they are of sufficient merit.

ALL STUDENTS can attend the large concerts at Topeka and

Kansas City, where such artists as Schumann-Heink, Malek, Walter Damrosch and others are frequently heard. The spring festival at Lawrence is an important feature of the musical life of the state. A chorus of 100 voices, an orchestra of national reputation, and noted soloists render several of the great masterpieces of choral and orchestral music, an opportunity which comes seldom to music students outside of the largest cities.

IN DRAWING AND PAINTING.

DRAWING.—In the studios of the drawing and painting department there are sixty-five casts from antique and modern sculpture. From these pupils make drawings until they are able to draw from the

LIVING MODEL.—For advanced pupils a model poses every day throughout the year. As soon as pupils can draw from a plaster cast, one-half their time is spent

PAINTING with oil- or water-colors from still-life objects, then from the living model until spring, when the whole class is taken out of doors to paint

LANDSCAPES, for which there is ample material near the University, as the country surrounding Lawrence is very picturesque. The pupils who study drawing for the purpose of

ILLUSTRATING do the same work as the others, with the exception that pen and ink are used in place of colors. Every year there is held at the University, under the direction of the department of drawing and painting, an

EXHIBITION of works of art. Last year the exhibition consisted of Tissot's Old Testament, 496 paintings in all. The library, containing several hundred books upon the fine arts, is annually increased, and lectures upon some subject relating to the fine arts are given throughout the year.

IN ELOCUTION.

SHAKSPERE AND THE MODERN DRAMA. Students in the department of elocution have opportunity throughout the year to hear numerous performances of Shakspeare and the modern drama as interpreted by well-known actors and actresses.

THE UNIVERSITY DRAMATIC CLUB, open to students of the University, gives two plays during the year, and offers opportunity for the practical study of the technique of acting. The following plays have been given by the club: 1901-'02, "Shore Acres," by James Herne; 1902-'03, "A Night Off," by Augustine Daly; 1903, "Alabama," by Augustus Thomas; 1904, "Rosemary," by Lewis N.

Parker and Murray Carson; 1905, "Comforts of Home," by Wm. Gillette; 1906, "An American Citizen," by Mary Lucetta Riley; 1907, "David Garrick," by Thomas Robertson.

THE ANNUAL FARCE, given by the students of the Junior class, on the evening of the Junior promenade.

THE SENIOR PLAY, written by the class-play committee, and given as one of the features of commencement week.

THE LITERARY SOCIETIES and DEBATING CLUBS give abundant opportunity for speaking before audiences.

INTERCOLLEGIATE DEBATES are open for contestants from any department of the University.

PUBLIC RECITALS are given from time to time in University hall by the class in elocution.

NOTED SPEAKERS at the Friday morning chapel exercises and on other occasions give students an opportunity to observe and determine for themselves the qualities of successful public speaking.

SPECIMEN GRADUATING PROGRAMS.

 IN PIANO.

Schumann..... Symphonic Etudes.

VOCAL SELECTION.

Henselt..... If I were a Bird.

Chaminade..... Autumn.

MacDowell..... Concert Etude, Op. 36.

VOCAL SELECTION.

Nicode..... Polonaise.

D'Hardelot..... Because.

VOCAL SELECTION.

Chopin..... Concerto in E minor.

 Last Movement.

 Orchestral Accompaniment Played on a Second Piano.

 IN ORGAN.

Mendelssohn..... Prelude and Fugue in C minor.

Lemaigre..... Prayer.

MacFarlane..... Scherzo.

VOCAL SELECTION.

Guilmant..... Sonata No. 4 in D minor.

 { Allegro assai.

 { Andante.

 { Adagio, Allegro vivace con fuoco.

VOCAL SELECTION.

Buck..... Variations on a Popular Air.

VOCAL SELECTION.

Widor..... Toccata in F major.

SPECIMEN GRADUATING PROGRAMS.

 IN VOICE.

- Carissimi*..... Vittoria Mio Core.
(Old Italian.)
- Mattei*..... Oh! Oh! Hear the Wild Wind Blow.
(Italian Boatman's Song.)
MR. MCELHINNY.
- Weber*..... Before Mine Eyes Beheld Him.
Scene and Aria from "Der Freischutz."
MISS COLLINS.
- Blumenthal*..... My Queen.
- Metcalf*..... Until You Came.
- Buck*..... Salve Regina.
MR. MCELHINNY.
- Hawley*..... { My Little Love.
 { Where Love Doth Build His Nest.
 { The Sweetest Flower That Blows.
MISS COLLINS.
- Wagner*..... To the Evening Star.
From "Tannhauser."
- Marschner*..... Upon That Day.
Air from "Hans Heiling."
MR. MCELHINNY.
-

IN VIOLIN.

- Handel*..... Sonata in A major.
- Keler Bela*..... Hungarian Idyl.
Vocal selection.
- Mendelssohn*..... Andante and Finale of Concert.
Vocal selection.
- Bohm*..... Cavatina.
- Pierne*..... Serenade.
- Wieniawski*..... Kujawiak Mazurka.
Vocal selection.
- Haydn*..... Trio in G major.

COURSES OF STUDY.

PIANOFORTE.

LEADING TO THE DEGREE OF BACHELOR OF MUSIC.

FRESHMAN YEAR.

First Term:

- Piano 1, twice a week, by appointment. Assistants.
Technic (Piano 9), once a week, by appointment. Assistants.
Harmony (Musical Theory 1), Tuesday and Friday, at 2:30.
Professor Skilton.
Rhetoric 1, two hours a week. Assistant Professors Bryant and Gray.
Physical Education 1, once a week, by appointment. Assistant Professor Fish.
History of Music, Thursday, at 4. Professor Skilton.
Recitals and Ensemble Playing.

Second Term:

- Piano 2, twice a week, by appointment. Assistants.
Technic (Piano 10), Wednesday, at 3. Assistants.
Harmony (Musical Theory 2), Tuesday and Friday, at 2. Professor Skilton.
Rhetoric 2, three hours a week. Assistant Professors Bryant and Gray.
Physical Education 2, once a week, by appointment. Assistant Professor Fish.
History of Music, Thursday, at 4. Professor Skilton.
Recitals and Ensemble Playing.

SOPHOMORE YEAR.

First Term:

- Piano 3, twice a week, by appointment. Professor Preyer and assistant.
Technic (Piano 11), once a week, by appointment. Assistants.
Harmony (Musical Theory 3), Tuesday and Friday at 3. Professor Skilton.
Physical Education 3, once a week, by appointment. Assistant Professor Fish.
English Literature I, three hours a week. Associate Professor Whitcomb, Assistant Professors Bryant and Gray.
Normal Class, Wednesday, at 4. Professor Skilton.

History of Music, Thursday, at 4. Professor Skilton.
Recitals and Ensemble Playing.

One of the following optionals may be taken (private lessons subject to fees):

Vocal Culture 1, twice a week, with Italian 1, twice a week, by appointment. Professor Hubach.

Free-hand Drawing (Drawing and Painting 1), Monday, Wednesday, and Friday, 9 to 12:15, or 1:30 to 4:30. Professor Griffith.

Elocution 2, two times a week. Associate Professor Frazier.
German 1, daily, at 8, 9, 11:15, or 2:30. Associate Professor Engel and Assistant Professor Corbin.

French 1, daily, at 8, 9, 11:15, or 2:30. Assistant Professors Le Duc, Neuen Schwander, or Vaughan.

Second Term:

Piano 4, twice a week, by appointment. Professor Preyer and assistant.

Technic (Piano 12), by appointment. Assistants.

Musical Analysis (Musical Theory 4), Tuesday and Friday, at 3. Professor Skilton.

Physical Education 4, once a week, by appointment. Assistant Professor Fish.

English Literature II, two hours a week. Associate Professor Whitcomb, Assistant Professors Bryant and Gray.

Normal Class, Wednesday, at 4. Professor Skilton.

History of Music, Thursday, at 4. Professor Skilton.

Recitals and Ensemble Playing.

One of the following optionals may be taken (private lessons are subject to fees):

Vocal Culture 1, twice a week, with Italian 1, twice a week, by appointment. Professor Hubach.

Free-hand Drawing (Drawing and Painting 1), Monday, Wednesday, and Friday, at 9 to 12:15, or 1:30 to 4:30. Professor Griffith.

Elocution 2, two times a week. Associate Professor Frazier.
German 2, daily, at 8, 9, 11:15, or 2:30. Associate Professor Engel and Assistant Professor Corbin.

French 2, daily, at 8, 9, 11:15, or 2:30. Assistant Professors Le Duc, Neuen Schwander, or Vaughan.

JUNIOR YEAR.

First Term:

- Piano 5, twice a week, by appointment. Professor Preyer.
 Composition (Musical Theory 7), Monday, at 3. Professor Skilton.
 Counterpoint (Musical Theory 5), Thursday, at 3. Professor Preyer.
 History of Music, Thursday at 4. Professor Skilton.
 English Literature III, Monday, Wednesday, and Friday, at 8. Associate Professor Whitcomb.
 Recitals and Ensemble Playing.
 One of the following optionals may be taken (private lessons are subject to fees):
 Vocal Culture 1 or 2, twice a week, by appointment. Professor Hubach.
 Drawing and Painting 1 or 2. Professor Griffith.
 Elocution 2, two times a week. Associate Professor Frazier.
 German 1 or 3, daily. Associate Professor Engel and Assistant Professor Corbin.
 French 1 or 3, daily. Assistant Professor Le Duc.
 Education 1, daily, at 3:30. Professor Olin.
 English Literature of the Nineteenth Century, three hours a week. Professor Dunlap.

Second Term:

- Piano 6, twice a week, by appointment. Professor Preyer.
 History of Music, Thursday, at 4. Professor Skilton.
 Composition (Musical Theory 8), Monday, at 3. Professor Skilton.
 Counterpoint (Musical Theory 5), Thursday at 3. Professor Preyer.
 Acoustics (Physics 11), by appointment. (Not given in 1908). Professor Hill.
 Recitals and Ensemble Playing.
 Two forensics.
 One of the following optionals may be taken (private lessons are subject to fees):
 Vocal Culture 1 or 2, twice a week, by appointment. Professor Hubach.
 Drawing and Painting 1 or 2. Professor Griffith.
 German 2 or 4, daily. Associate Professor Engel and Assistant Professor Corbin.
 French 2 or 4, daily. Assistant Professor Le Duc.

Education 1, daily, at 3:30. Professor Olin.

Elocution, two times a week. Associate Professor Frazier.

English Poetry of the Nineteenth Century, three hours a week. Professor Dunlap.

SENIOR YEAR.

First Term:

Piano 7, twice a week, by appointment. Professor Preyer.

Composition (Musical Theory 9), Wednesday, at 2:30. Professor Preyer.

Canon and Fugue (Musical Theory 11), once a week, by appointment. Professor Skilton.

Recitals and Ensemble Playing.

Two forensics.

Optional, Shakspeare, three hours a week. Professor Dunlap.

Second Term:

Piano 8, twice a week, by appointment. Professor Preyer.

Instrumentation (Musical Theory 12), once a week, Wednesday, at 3. Professor Skilton.

Composition (Musical Theory 10), once a week. Professor Preyer.

Two forensics, or graduating thesis.

Optional, Shakspeare, three hours a week. Professor Dunlap.

GRADUATE COURSE.

Piano 13, a graduate course is offered in pianoforte, leading to the degree of master of music (M. M.) The course is open only to graduates of the artists' course who have taken Senior composition work, and to graduates of other schools who have done a corresponding amount of work. In all cases an entrance examination will be insisted upon in both piano and musical composition. The examination will consist of the technic, studies, concertos, etc., and the composition work required for the completion of the Senior year, outlined above; and furthermore, grade I will be required of all applicants. A pianoforte recital is required upon completion of the course and the performance of an original composition is one of the larger forms.

ORGAN.

LEADING TO THE DEGREE OF BACHELOR OF MUSIC.

Three years' course, open to those who have completed the work of the Freshman year in piano.

SOPHOMORE YEAR.

First Term:

Organ 1, once a week, by appointment. Professor Skilton.

Piano 3, once a week, by appointment. Assistant.

Technic (Piano 11), once a week, by appointment. Assistant.

Harmony (Musical Theory 3), Tuesday and Friday, at 3. Professor Skilton.

Physical Education 3, once a week, by appointment. Assistant Professor Fish.

English Literature 1, three hours a week. Associate Professor Whitcomb, Assistant Professors Bryant and Gray.

Normal Class, Wednesday, at 4. Professor Skilton.

History of Music, Thursday, at 4. Professor Skilton.

Recitals and Ensemble Playing.

One of the following optionals may be taken (private lessons subject to fees):

Vocal Culture 1, twice a week, with Italian 1, twice a week, by appointment. Professor Hubach.

Free-hand Drawing (Drawing and Painting 1), Monday, Wednesday, and Friday, 9 to 12:15, or 1:30 to 4:30. Professor Griffith.

Elocution 2, two times a week. Associate Professor Frazier.

German 1, daily, at 8, 9, 11:15, or 2:30. Associate Professor Engel and Assistant Professor Corbin.

French 1, daily, at 8, 9, 11:15, or 2:30. Assistant Professors Le Duc, Neuen Schwander, or Vaughan.

Second Term:

Organ 2, once a week, by appointment. Professor Skilton.

Piano 4, once a week, by appointment. Assistant.

Technic (Piano 12), once a week, by appointment. Assistant.

Musical Analysis (Musical Theory 4), Tuesday and Friday, at 3. Professor Skilton.

Physical Education 4, once a week, by appointment. Assistant Professor Fish.

English Literature 2, two hours a week. Associate Professor Whitcomb, Assistant Professors Bryant and Gray.

Normal Class, Wednesday, at 4. Professor Skilton.

History of Music, Thursday, at 4. Professor Skilton.

Recitals and Ensemble Playing.

One of the following optionals may be taken (private lessons are subject to fees):

Vocal Culture 1, twice a week, with Italian 1, twice a week, by appointment. Professor Hubach.

Free-hand Drawing (Drawing and Painting 1), Monday, Wednesday, and Friday, at 9 to 12:15, or 1:30 to 4:30. Professor Griffith.

Elocution 2, two times a week. Associate Professor Frazier.

JUNIOR YEAR.

First Term:

Organ 3, twice a week, by appointment. Professor Skilton.

Composition (Musical Theory 7), Monday, at 3. Professor Skilton.

Counterpoint (Musical Theory 5), Thursday, at 3. Professor Preyer.

History of Music, Thursday, at 4. Professor Skilton.

English Literature 3, Monday, Wednesday, and Friday, at 8.

Associate Professor Whitcomb.

Recitals and Ensemble Playing.

One of the following optionals may be taken (private lessons are subject to fees):

Vocal Culture 1 or 2, by appointment. Professor Hubach.

German 1 or 3, daily. Associate Professor Engel and Assistant Professor Corbin.

French 1 or 3, daily. Assistant Professor Le Duc.

Drawing and Painting 1 or 2. Professor Griffith.

Elocution, two times a week. Associate Professor Frazier.

English Literature of the Nineteenth Century, three hours a week. Professor Dunlap.

Second Term:

Organ 4, twice a week, by appointment. Professor Skilton.

Composition (Musical Theory 8), Monday, at 3. Professor Skilton.

Counterpoint (Musical Theory 6), Tuesday, at 3. Professor Preyer.

Acoustics, two hours a week. Professor Hill. (Not given in 1907-'08.

History of Music, Thursday, at 4. Professor Skilton.

Normal Class, Wednesday, at 4. Professor Hubach.

Recitals and Ensemble Playing.

Two forensics.

One of the following optionals may be taken (private lessons are subject to fees):

Vocal Culture 1 or 2, by appointment. Professor Hubach.

Drawing and Painting 1 or 2. Professor Griffith.

Elocution, two times a week. Associate Professor Frazier.

German 2 or 4, daily. Associate Professor Engel and Assistant Professor Corbin.

French 2 or 4, daily. Assistant Professor Le Duc.

English Poetry of the Nineteenth Century. Three hours a week. Professor Dunlap.

SENIOR YEAR.

First Term:

Organ 5, twice a week, by appointment. Professor Skilton.

Composition (Musical Theory 9), Wednesday, at 2:30. Professor Preyer.

Canon and Fugue (Musical Theory 11), Wednesday at 11. Professor Skilton.

Church Music 7, once a week. Professor Skilton.

Recitals and Ensemble Playing.

Optional. Shakspeare. Three hours a week. Professor Dunlap.

Two forensics.

Second Term:

Organ 6, twice a week, by appointment. Professor Skilton.

Instrumentation (Musical Theory 12), Wednesday, at 3. Professor Skilton.

Composition (Musical Theory 10), Wednesday, at 9. Professor Preyer.

Optional. Shakspeare. Three hours a week. Professor Dunlap.

Two forensics.

VIOLIN OR VIOLONCELLO.

LEADING TO THE DEGREE OF BACHELOR OF MUSIC.

These courses are the same as the four-year course in piano, except that violin or violoncello 1 to 8 take the place of piano 1 to 8. Piano 9 to 12 is required.

VOCAL CULTURE.

LEADING TO THE DEGREE OF BACHELOR OF MUSIC.

FRESHMAN YEAR.

First Term:

Vocal Culture 1, twice a week, by appointment. Professor Hubach or Mrs. Lyons.

Harmony (Musical Theory 1), Tuesday and Friday, at 2. Professor Skilton.

Rhetoric 1, two hours a week. Assistant Professors Bryant and Gray.

Italian 1, twice a week, by appointment. Assistant Professor Vaughan.

Piano I, one hour a week with assistant.

Physical Education 1, once a week. Assistant Professor Fish.

History of Music, Thursday, at 4. Professor Skilton.

Recitals and Chorus Singing.

Second Term:

Vocal Culture 2, twice a week, by appointment. Professor Hubach or Mrs. Lyons.

Harmony (Musical Theory 2), Tuesday and Friday, at 2:30. Professor Skilton.

Rhetoric 1, three hours a week. Assistant Professors Bryant and Gray.

Italian 1, twice a week, by appointment. Assistant Professor Vaughan.

Piano 2, one hour a week with assistant.

Physical Education 2, once a week. Assistant Professor Fish.

History of Music, Thursday, at 4. Professor Skilton.

Recitals and Chorus Singing.

SOPHOMORE YEAR.

First Term:

Vocal Culture 3, twice a week, by appointment. Professor Hubach or Mrs. Lyons.

Harmony (Musical Theory 3), Tuesday and Friday, at 3:00. Professor Skilton.

English Literature 1, three hours a week. Associate Professor Whitcomb, Assistant Professors Bryant and Gray.

Physical Education 3, once a week. Assistant Professor Fish.

Sight-singing Class, Wednesday, at 4. Mrs. Lyons.

History of Music, Thursday, at 4. Professor Skilton.

Recitals and Chorus Singing.

Piano 3, one hour a week with assistant.

One of the following optionals may be taken (private lessons are subject to fees):

Piano 1, twice a week. Professor Preyer.

Free-hand Drawing (Drawing and Painting 1), Monday, Wednesday, and Friday, 9 to 12:15, or 1:30 to 4:30. Professor Griffith.

Elocution 2, two times a week. Associate Professor Frazier.

German 1, daily, at 8, 9, 11:15, or 2:30. Associate Professor Engel and Assistant Professor Corbin.

French 1, daily, at 8, 9, 11:15, or 2:30. Assistant Professors Le Duc, Neuen Schwander, or Vaughan.

Second Term:

Vocal Culture 4, twice a week, by appointment. Professor Hubach or Mrs. Lyons.

Musical Analysis (Musical Theory 4), Tuesday and Friday, at 3. Professor Skilton.

English Literature 2, two hours a week. Associate Professor Whitcomb, Assistant Professors Bryant and Gray.

Physical Education 4, once a week. Assistant Professor Fish.

Sight-singing Class, Wednesday, at 4. Mrs. Lyons.

History of Music, Thursday, at 4. Professor Skilton.

Recitals and Chorus Singing.

Piano 4, one hour a week, with assistant.

One of the following optionals may be taken (private lessons are subject to fees):

Piano 1, twice a week, by appointment. Professor Preyer.

Free-hand Drawing (Drawing and Painting 1), Monday, Wednesday, and Friday, 9 to 12:15, or 1:30 to 4:30. Professor Griffith.

Elocution 4, two times a week. Associate Professor Frazier.

German 2, daily, at 8, 9, 11:15, or 2:30. Associate Professor Engel and Assistant Professor Corbin.

French 2, daily, at 8, 9, 11:15, or 2:30. Assistant Professors Le Duc, Neuen Schwander, or Vaughan.

JUNIOR YEAR.

First Term:

Vocal Culture 5, twice a week, by appointment. Professor Hubach.

Composition (Musical Theory 7), Monday, at 3. Professor Skilton.

Counterpoint (Musical Theory 5), Thursday, at 3. Professor Preyer.

History of Music, Thursday, at 4. Professor Skilton.

English Language 3, Monday, Wednesday, and Friday, at 8.
Associate Professor Whitcomb.

One of the following optionals may be taken (private lessons are subject to fees):

Piano 1 or 2, twice a week, by appointment. Professor Preyer.

Drawing and Painting 1 or 3. Professor Griffith.

Elocution, two times a week. Associate Professor Frazier.

German 1 or 3, daily. Associate Professor Engel and Assistant Professor Corbin.

French 1 or 3, daily. Assistant Professor Le Duc.

English Literature of the Nineteenth Century, three hours a week. Professor Dunlap.

Second Term:

Vocal Culture 6, twice a week, by appointment. Professor Hubach.

Composition (Musical Theory 8), Monday, at 3. Professor Skilton.

Counterpoint (Musical Theory 6), Thursday, at 3:30. Professor Preyer.

Acoustics, two hours a week. Professor Hill. (Not given in 1907-'08.)

History of Music, Thursday, at 4. Professor Skilton.

Two forensics.

One of the following optionals may be taken (private lessons are subject to fees):

Piano 1 or 2, twice a week, by appointment. Professor Preyer.

Drawing and Painting 1 or 2. Professor Griffith.

Elocution, two times a week. Associate Professor Frazier.

German 2 or 4, daily. Associate Professor Engel and Assistant Professor Corbin.

French 2 or 4, daily. Assistant Professor Le Duc.

English Poetry of the Nineteenth Century, three hours a week. Professor Dunlap.

SENIOR YEAR.

First Term:

Vocal Culture 7, twice a week, by appointment. Professor Hubach.

Composition (Musical Theory 9), Wednesday, at 3:30. Professor Preyer.

Canon and Fugue (Musical Theory 11), Wednesday, at 11. Professor Skilton.

Two forensics.

Optional, Shakspeare, three hours a week. Professor Dunlap.

Second Term:

Vocal Culture 8, twice a week, by appointment. Professor Hubach.

Instrumentation (Musical Theory 12), Wednesday, at 3. Professor Skilton.

Opera, once a week. Professor Hubach.

Dramatic Action, twice a week, by appointment. Associate Professor Frazier.

Two forensics.

Optional, Shakspeare, three hours a week. Professor Dunlap.

DRAWING AND PAINTING.

LEADING TO THE DEGREE OF BACHELOR OF PAINTING.

FRESHMAN YEAR.

Drawing (Drawing and Painting 1), Monday, Wednesday, and Friday, 1:30 to 4:30, throughout the year. Professor Griffith.

Painting (Drawing and Painting 6), daily, 1:30 to 4:30, 2d term. Professor Griffith.

English Literature 1 and 2, alternating with Rhetoric 1 and 2, throughout the year. Associate Professor Whitcomb, Assistant Professors Bryant and Gray.

Composition (Drawing and Painting 9), Tuesday, at 1:30, throughout the year. Professor Griffith.

Perspective (Drawing and Painting 10), Thursday, at 1:30, throughout the year. Professor Griffith.

Physical Education 1 and 2, twice a week, throughout the year. Assistant Professor Fish.

SOPHOMORE YEAR.

Drawing (Drawing and Painting 2), 1st term and 2d term, (a), daily, 1:30 to 4:30. Professor Griffith.

Drawing (Drawing and Painting 3 and 4), Monday, Wednesday, and Friday, 1:30 to 4:30, throughout the year. Professor Griffith.

Ornamental Design (Drawing and Painting 12), Monday, at 4:30, throughout the year. Professor Griffith.

Composition (Drawing and Painting 9), Tuesday, at 1:30, throughout the year. Professor Griffith.

English Literature 3, 1st term, three hours a week. Associate Professor Whitcomb.

One two-hour course in English Literature, 2d term.

Optional: French 1 and 2, German 1 and 2.

Two forensics, 1st and 2d terms.

JUNIOR YEAR.

- Painting (Drawing and Painting 7), 1st term and 2d term, daily, 1:30 to 4:30. Professor Griffith.
- Painting (Drawing and Painting 8), 2d term, daily, 1:30 to 4:30. Professor Griffith.
- Ornamental Design (Drawing and Painting 13), Thursday, at 4:30, throughout the year. Professor Griffith.
- Composition (Drawing and Painting 9), Tuesday, at 1:30, throughout the year. Professor Griffith.
- History of Greek Art (Greek 17), 2d term, daily, at 11:15. Professor Wilcox.

- English Rhetoric 3 or 5 and 4 or 6, 1st and 2d terms, Monday, Wednesday, and Friday, at 8. Associate Professor O'Leary and Assistant Professor Sisson.
- Acoustics and Optics (Physics 11), 2d term, by appointment. Professor Blake.
- Optional: French 1 and 2, or 3 and 4; German 1 and 2, or 3 and 4. Two forensics, 2d term.

SENIOR YEAR.

- Painting (Drawing and Painting 7), 1st term and 2d term, daily, 1:30 to 4:30. Professor Griffith.
- Painting (Drawing and Painting 8), 2d term, daily, 1:30 to 5:30. Professor Griffith.
- History of Ornament (Drawing and Painting 13), Thursday, at 4:30, throughout the year. Professor Griffith.
- Composition (Drawing and Painting 9), Tuesday, at 1:30, throughout the year. Professor Griffith.
- Modern Art (History of the Fine Arts 3), 2d term, Monday and Thursday, at 2:30. Professor Griffith.
- Four forensics, or graduating thesis.
- Graduating painting.

Rhetoric 1, twice a week. Assistant Professors Bryant and Gray.

English Literature 1, three times a week. Associate Professor Whitcomb, Assistant Professors Bryant and Gray.

One other optional course may be chosen from the College, upon consent of the instructor.

Second Term:

Vocal Culture 8, twice a week, by appointment. Professor Hubach.

Instrumentation (Musical Theory 12), Wednesday, at 3. Professor Skilton.

Opera, once a week. Professor Hubach.

Dramatic Action, twice a week, by appointment. Associate Professor Frazier.

Two forensics.

Optional, Shakspeare, three hours a week. Professor Dunlap.

DRAWING AND PAINTING

Ornamental Design (Drawing and Painting 7), throughout the year. Professor Griffith.

Composition (Drawing and Painting 9), Tuesday, at 1:30, throughout the year. Professor Griffith.

English Literature 3, 1st term, three hours a week. Associate Professor Whitcomb.

One two-hour course in English Literature, 2d term.

Optional: French 1 and 2, German 1 and 2.

Two forensics, 1st and 2d terms.

JUNIOR YEAR.

- Painting (Drawing and Painting 7), 1st term and 2d term, daily, 1:30 to 4:30. Professor Griffith.
- Painting (Drawing and Painting 8), 2d term, daily, 1:30 to 4:30. Professor Griffith.
- Ornamental Design (Drawing and Painting 13), Thursday, at 4:30, throughout the year. Professor Griffith.
- Composition (Drawing and Painting 9), Tuesday, at 1:30, throughout the year. Professor Griffith.
- History of Greek Art (Greek 17), 2d term, daily, at 11:15. Professor Wilcox.

ELOCUTION.

TWO-YEAR COLLEGIATE COURSE.

The course in elocution covers two years of regular University work. Its purpose is to train students to become intelligent and effective readers, whether in the home or on the platform; to give the student an understanding and appreciation of the drama, both as literature and as a theatrical representation, and to fit him to teach expression in all its phases in schools and colleges. A certificate is given upon completion of the two years' course.

JUNIOR YEAR.

First Term:

- Principles of Vocal Expression (Elocution 1) two hours a week, Tuesday and Thursday, at 1:30. Associate Professor Frazier.
- Methods of Teaching Reading (Elocution 2), two hours a week, Tuesday and Thursday, at 9. Associate Professor Frazier.
- Shakspere (Elocution 3), two hours, Tuesday and Thursday, at 2:30. Mr. ———.
- Breathing and Voice Production (Elocution 4), two hours, Monday and Wednesday, at 1:30. Associate Professor Frazier and Mr. ———.
- Repertoire (Elocution 9), 1 hour, Friday, at 1:30. Associate Professor Frazier and Mr. ———.
- Rhetoric 1, twice a week. Assistant Professors Bryant and Gray.
- English Literature 1, three times a week. Associate Professor Whitcomb, Assistant Professors Bryant and Gray.
- One other optional course may be chosen from the College, upon consent of the instructor.

Second Term:

Addresses, Lectures and Readings (Elocution 5), three hours a week, Monday, Wednesday and Friday, at 9. Mr. ———.

Dialects and Impersonations (Elocution 6), two hours a week, Monday and Wednesday, at 1:30. Associate Professor Frazier.

Staging of Plays (Elocution 7), two hours, Monday and Wednesday, at 1:30. Associate Professor Frazier.

Stage Department (Elocution 8), two hours, Monday and Wednesday, at 2:30. Associate Professor Frazier and Mr. ———.

Repertoire (Elocution 9), one hour, Friday, at 1:30. Associate Professor Frazier and Mr. ———.

Rhetoric 2, three times a week. Assistant Professors Bryant and Gray.

English Literature 2, twice a week. Associate Professor Whitcomb, Assistant Professors Bryant and Gray.

One additional optional course may be chosen from the College, upon the consent of the instructor.

SENIOR YEAR.

First Term:

Debate and Parliamentary Law (Elocution 10), two hours a week, Tuesday and Thursday, at 11:15. Mr. ———.

Advanced Vocal Culture (Elocution 11), two hours a week, Tuesday and Thursday, at 1:30. Associate Professor Frazier and Mr. ———.

Presentation of Farces (Elocution 12), two hours, Monday and Wednesday, at 1:30. Associate Professor Frazier.

Verse Forms (Elocution 13), two hours, Tuesday and Thursday, at 1:30. Mr. ———.

Repertoire (Elocution 9), one hour, Friday, at 1:30. Associate Professor Frazier and Mr. ———.

Rhetoric 3, daily, at 8. Associate Professor O'Leary and assistants.

Second Term:

Extempore Speaking and Lecturing (Elocution 14), two hours, Tuesday and Thursday, at 9. Associate Professor Frazier.

Presentation of Plays (Elocution 15), two hours, Monday and Wednesday, at 1:30. Associate Professor Frazier.

Browning and Tennyson (Elocution 16), two hours, Tuesday and Thursday, at 1:30. Mr. ———.

Repertoire (Elocution 9), one hour a week, Friday, at 1:30. Associate Professor Frazier and Mr. ———.

Logic and Psychology, daily, at 8. Assistant Professor Hogg.
English Literature 5, daily, at 10:15. Professor Dunlap.
Public Recitals (Elocution 17), two hours, Monday and Wednesday, at 2:30. Associate Professor Frazier and Mr. ———.

TWO-YEAR COLLEGIATE COURSES.

These courses (identical with the work of the first and second years of the four-year collegiate courses outlined above) are intended for those students who feel that their time is limited. They are especially designed for teachers. A certificate is given upon completion of one of these courses.

ARTISTS' COURSES

IN PIANO, VOICE, VIOLIN, VIOLONCELLO, ORGAN, OR MUSICAL COMPOSITION.

These courses are the same as the four-year collegiate courses in these subjects, requiring for graduation a graduating recital or a program of original musical compositions, or a combination of both.

For entrance and continuation in these courses the highest grade will be required in all examinations in piano, voice, organ, violin, violoncello, or composition.

NORMAL COURSE

IN PUBLIC-SCHOOL MUSIC AND SINGING AT SIGHT.

This work consists of the Freshman year of the four-year course in vocal culture, together with vocal culture 6 and 7, upon the completion of which a teacher's certificate is given.

COURSES OF INSTRUCTION.

DRAWING AND PAINTING.

Professor GRIFFITH.

All courses except 5 are required of students of drawing and painting and are open to other students of the School of Fine Arts who are prepared for them.

1.—FREE-HAND DRAWING. Free-hand drawing in charcoal, from the cast. The method of instruction aims to teach the student to construct form in a simple and correct manner. Freshman, throughout the year, Monday, Wednesday, and Friday, 1:30 to 4:30. Professor Griffith.

2.—FREE-HAND DRAWING. Free-hand drawing in charcoal, from life. Designed to give firm construction in drawing and training in grasping the essential character of the model. Sophomore, 1st term, and 2d term, (a), Monday, Wednesday, and Friday, 1:30 to 4:30. Professor Griffith.

3.—FREE-HAND DRAWING. Free-hand drawing in pen and ink, from cast and still life. The technique of pen drawing for reproduction. Sophomore, 1st term, daily, 1:30 to 4:30. Professor Griffith.

4.—FREE-HAND DRAWING. Free-hand drawing with water-colors. Wash-drawing for reproduction by the half-tone process. Sophomore, 2d term, daily, 1:30 to 4:30. Professor Griffith.

5.—DRAWING. This course aims to meet the needs of two classes of students: Students who wish training in artistic preparation and graphic expression, for its general culture value; and technical students, to whom some drawing is essential. It consists of the first eighteen weeks' work, covered by courses 1, 3, 9, and 10, three hours daily.

6.—PAINTING. Painting with water-color, oil, or pastille, from still life. Students begin the study of color in this class. The observation and reproduction of simple masses of form and color. Freshman, 2d term; Sophomore, 1st term and 2d term; daily, 1:30 to 4:30. Professor Griffith.

7.—PAINTING. Painting with water-color, oil, or pastille, from life. Portrait painting is the object of the instruction given in this class. Junior and Senior, 1st and 2d terms, daily, 1:30 to 4:30. Professor Griffith.

8.—PAINTING. Painting of landscape and human figures in the open air. Junior and Senior, 2d term, daily, 1:30 to 5:30. Professor Griffith.

9.—COMPOSITION. Throughout the entire course every student is required to study the pictorial compositions of the masters, and each week to make one original composition upon a given subject. Tuesday, at 1:30. Professor Griffith.

10.—PERSPECTIVE. Elementary perspective, shadows, and reflections. Freshman, 1st term, Thursday, at 1:30. Professor Griffith.

11.—PERSPECTIVE. Advanced perspective; the application of the principles of perspective to pictorial purposes. Freshman, 2d term, Thursday, at 1:30. Professor Griffith.

12.—ORNAMENTAL DESIGN. The anatomy of pattern. Sophomore, 1st term, (a), Wednesday, 4:30 to 5:30. The planning of ornament. Sophomore, 1st term, (b), and 2d term, at 11:15. Professor Griffith.

13.—ORNAMENTAL DESIGN. The application of ornament. Junior, 1st and 2d terms, Monday, 4:30 to 5:30. The history of ornament. Senior, 1st and 2d terms, Thursday, at 11:15. Professor Griffith.

EDUCATION.

1.—THE HISTORY OF EDUCATION. A survey of both ancient and modern periods. Studies of typical movements in education, the development of national systems, and the work of great educators. 1st and 2d terms, Monday, Wednesday, and Friday, at 3:30. Professor Olin.

ELOCUTION.

Associate Professor FRAZIER.

Mr. ———.

Courses 1 to 17, inclusive, are arranged to cover two years of consecutive work in the University. The first nine courses should be taken the first year; the remaining courses the second year. Course 18 is for special students who desire to pursue the study of elocution along lines not indicated in the regular courses.

1.—PRINCIPLES OF VOCAL EXPRESSION. Two hours, 1st term, Tuesday and Thursday, at 1:30. Purpose in utterance; types of utterance—formulative, discriminative, emotional, and volitional. Study of grouping. Text, Chamberlain and Clark. Associate Professor Frazier.

2.—METHODS OF TEACHING READING. Two hours, 1st term, Tuesday and Thursday, at 9. The aims of this course are: (1) To

present a brief review of past elecutionary methods; (2) to lay out a definite and graded method of expressional developments; and (3) to give the student opportunity to test the value of the various methods under the direction of the instructor. Associate Professor Frazier.

3.—SHAKSPERE. Two hours, 1st term, Tuesday and Thursday, at 2:30. One comedy and one tragedy will be studied. The student will be required to memorize some of the more important scenes and to impersonate the various characters. Mr. ———.

4.—BREATHING AND VOICE PRODUCTION. Two hours, 1st term, Monday and Wednesday, at 1:30. Methods of breathing—corrective exercises for overcoming faulty breathing. Breathing in its relation to voice production. Voice development. Associate Professor Frazier and Mr. ———.

5.—ADDRESSES, LECTURES AND READINGS. Three hours, 2d term, Monday, Wednesday, and Friday, at 9. Exercises for the development of ability in extempore speaking. Training in the use of the manuscript in the presentation of original compositions. Practice in formulating, outlining and preparing papers and informal talks for various occasions. Suggestions for reading articles other than one's own. Mr. ———.

6.—DIALECTS AND IMPERSONATIONS. Two hours, 2d term, Tuesday and Thursday, at 1:30. The study of the various dialects, the Irish, Scotch, German, etc. Impersonations of characters of the novel and drama, and studies in pantomimic action. Associate Professor Frazier.

7.—STAGING OF PLAYS. Two hours, 2d term, Monday and Wednesday, at 1:30. Practical training in theatrical art and etiquette. The choosing of a good play, and its fitness for stage presentation. Stage effects and how they are produced. Associate Professor Frazier.

8.—STAGE DEPARTMENT. Two hours, 2d term, Monday and Wednesday, at 2:30. Practical platform work with criticism on stage presence. (b) Voice building: Part of each lesson will be devoted to voice training. Associate Professor Frazier and Mr. ———.

9.—REPERTOIRE. One hour, throughout the course, Friday, at 1:30. This is a general class in which all students of the school come together for weekly recitals in elocution. Programs will be given by the students followed by criticism and discussion led by the instructor in charge. Associate Professor Frazier and Mr. ———.

10.—DEBATE AND PARLIAMENTARY LAW. Two hours, 1st term. Tuesday and Thursday, at 11:15. The principles of argumentation as applied to oral debates. Weekly debates held between negative and affirmative debating teams. The study of parliamentary law and the application of these laws to the conduct of these debates. Mr. ———.

11.—ADVANCED VOCAL CULTURE. Two hours, 1st term. Tuesday and Thursday, at 1:30. Individual and class training for compass, flexibility and purity of tone. Special attention given to individual defects in voice formation with specific exercises for their removal. Associate Professor Frazier and Mr. ———.

12.—PRESENTATION OF FARCES. Two hours, 1st term. Monday and Wednesday, at 1:30. The study and staging of well-known standard farces. Parts will be assigned to the various members of the class and performances will be given before invited audiences. Associate Professor Frazier.

13.—VERSE FORMS. Two hours, 1st term. Tuesday and Thursday, at 1:30. Verse form in its relation to oral interpretation. The study of the lyric, ballad, ode, sonnet, idyll, dramatic monologue, etc. Mr. ———.

14.—EXTEMPORE SPEAKING AND LECTURING. Two hours, 2d term, Tuesday and Thursday, at 9. Advanced course. The study of concreteness in narration and description, with special reference to public programs. Formal lectures and readings, with incidental comments. Associate Professor Frazier.

15.—PRESENTATION OF PLAYS. Two hours, 2d term, Monday and Wednesday, at 1:30. A continuation of course 12. Instead of the farce, the study of the more serious drama is undertaken. Students will participate in the plays and assist in the rehearsals of less difficult plays given by other students. Associate Professor Frazier.

16.—BROWNING AND TENNYSON. Two hours, 2d term, Tuesday and Thursday, at 1:30. The analysis and study of the poetry of Browning and Tennyson for purpose of oral interpretation. Mr. ———.

17.—PUBLIC RECITALS. Two hours, 2d term, Monday and Wednesday, at 2:30. A course preparatory for the public graduating recital required of all students who finish the work of the school. Criticism and discussion from the class and instructor in charge. Associate Professor Frazier and Mr. ———.

18.—PRIVATE CONFERENCES. The object of this course is to

give students an opportunity to enroll for private work in elocution without becoming a regular student in the school. Hours by appointment. Associate Professor Frazier and Mr. ———.

ENGLISH LANGUAGE AND LITERATURE.

1.—ENGLISH LITERATURE. General history, supplemented with class study of representative authors and with required library reading. Text-books, Simond's English Literature and Manly's English Poetry (1170-1892). Required of all Freshmen in the School of Fine Arts. 1st or 2d terms: 1st term, three hours, Monday, Wednesday, and Friday, at 8, 9, 10:15, 11:15, 3:30, and 4:30; 2d term, two hours, Tuesday and Thursday, at 8, 9, 10:15, 11:15, 2:30, and 3:30. Associate Professors Whitcomb and O'Leary and Assistant Professors Raymond, Bryant, and Gray.

2.—ENGLISH LITERATURE. (a) English literature of the eighteenth century. Text-book, Gosse's History of Eighteenth Century Literature. Lectures, discussions, essays, and collateral library work. (b) An elementary course in English poetry. Text-book, Manly's English Poetry (1170-1892). Lectures, reports, and collateral library work. Required of all Sophomores in the School of Fine Arts. 1st or 2d terms, five hours, daily. 1st term, at 11:15; 2d term, at 8, 11:15, and 2:30. Associate Professor Whitcomb and Assistant Professors Bryant and Gray.

3.—RHETORIC AND ENGLISH COMPOSITION. Outlines of rhetoric, with exercises and themes. Required of all Freshmen in the School of Fine Arts. Two hours, Tuesday and Thursday: 1st term, at 8, 9, 10:15, 11:15, 3:30, and 4:30, and at other hours to be arranged; 2d term, three hours, Monday, Wednesday, and Friday, at 8, 9, 10:15, 11:15, 2:30, and 3:30. Assistant Professors Bryant, Gray, Gardner, and instructors.

4.—NARRATION AND DESCRIPTION. Study of general principles, with exercises. Required of all Juniors in the School of Fine Arts. 1st term, three hours, Monday Wednesday, and Friday, at 8; 2d term, two hours, Tuesday and Thursday, at 8. Associate Professor O'Leary and Assistant Professor Gardner.

5.—EXPOSITION AND ARGUMENT. Study of general principles, with exercises and briefs. 2d term, three hours, Monday, Wednesday, and Friday, at 8; 1st term, two hours, Tuesday and Thursday, at 8. Professor Hopkins.

FRENCH.

1.—ELEMENTARY FRENCH I. Grammar (Fraser and Squair) and easy reading. Five hours, 1st term, daily, at 8, 9, 10:15, 11:15, or 1:30. Also given in the 2d term, five hours, daily, at 11. Drill in pronunciation and forms. Open to all students who have had three years of Latin or three years of German. Assistant Professor Neuen Schwander, Assistant Professor Le Duc, or Assistant Professor Schoch.

2.—ELEMENTARY FRENCH II. Five hours, 2d term, daily, at 8, 9, 10:15, 11:15, or 1:30. Also given in the first term, five hours, daily, at 9. A continuation of course 1. Reading of simple prose texts, with exercises in dictation and elementary composition. Assistant Professor Le Duc, Assistant Professor Neuen Schwander, or Assistant Professor Schoch.

3.—MODERN FRENCH PROSE. Three hours, both terms—1st term, Monday, Wednesday, and Friday, at 9; 2d term, Monday, Wednesday, and Friday, at 8. Translation and reading of some works of Mérimée, George Sand, Anatole France and René Bazin. Assistant Professor Neuen Schwander or Assistant Professor Le Duc.

4.—COMPOSITION. Two hours, both terms, Tuesday and Thursday, 1st term, at 9; 2d term, at 8. Written exercises intended chiefly as a grammatical review. Oral exercises. Dictation. Assistant Professor Le Duc or Assistant Professor Neuen Schwander.

GERMAN.

1.—OUTLINE OF GRAMMAR. The first eighteen lessons of Otis, with composition exercises. Carruth's Reader, about fifty pages. 1st term, daily at 8, 9, 10:15, 11:15, 1:30 and 2:30; 2d term, at 1:30. Associate Professor Engel, Assistant Professor Corbin, and assistants.

2.—CARRUTH'S READER, completed, ZSCHOKKE, KLEIST, HEYSE, (100 pp.), and SCHILLER'S WILHELM TELL (complete). Also special exercises on case government and auxiliary verbs and sight-reading. 2d term, daily, at 8, 9, 11:15, and 1:30; 1st term, at 2:30. Associate Professor Engel, Assistant Professor Corbin, and assistants.

3.—REVIEW OF GRAMMAR. Freytag's Die Journalisten. Geschichte des 30-jährigen Krieges. Sight-reading. 1st term, daily, at 8, 9, 10:15, 11:15, 1:30, and 3:30; 2d term, at 9. Associate Professor Engel, Assistant Professor Corbin, and assistants.

4.—SCHILLER'S *WALLENSTEIN* (complete). 2d term, daily, at 8, 9, 10:15, 11:15, and 3:30; 1st term, at 1:30. Associate Professor Engel, Assistant Professor Corbin, and assistants.

GREEK.

17.—HISTORY OF GREEK ART. Lectures, recitations, private reading, writing of themes. 2d term, daily, at 11:15. Professor Wilcox. (Not given in 1907.)

MUSICAL THEORY.

Professor SKILTON.

Professor PREYER.

The following courses are required of all students in the regular music courses, excepting 9 and 10, which are optional:

1.—HARMONY. The study of overtones, scales, intervals, triads and seventh chords and their inversions. The practical work consists of harmonizing melodies in soprano or bass and playing chord progressions at the piano. Freshman, 1st term, Tuesday and Friday, at 2. Chadwick's *Harmony* used. Professor Skilton.

2.—HARMONY. The study of close and open harmony, dominant ninth and diminished seventh chords, modulation. Practical work continued. Freshmen, 2d term, Tuesday and Friday, at 2. Professor Skilton.

3.—HARMONY. The study of modulation, irregular resolutions, altered chords, suspensions, passing tones, organ point, harmonization of florid melodies. Practical work continued. Sophomore, 1st term, Tuesday and Friday, at 3. Professor Skilton.

4.—MUSICAL ANALYSIS. Review of *Harmony*. Analysis of two- and three-part song form and song with trio; the minuet, march and waltz. Classical models with original work. Sophomore, 2d term, Tuesday and Friday, at 3. Professor Skilton.

5.—COUNTERPOINT. The different orders of single counterpoint in two, three and four parts. Junior, 1st term, Thursday, at 3. Professor Preyer.

6.—COUNTERPOINT. Double and triple counterpoint; counterpoint in the twelfth and fifteenth and in more than four parts. Modern counterpoint. Junior, 2d term, Thursday, at 3. Professor Preyer.

7.—MUSICAL COMPOSITION. The theme and variations, dance and song forms. Analysis of classical models and practical work. Junior, 1st term, Monday, at 3. Professor Skilton.

8.—MUSICAL COMPOSITION. The sonata and rondo forms; analy-

sis of classical sonatas; original work. Junior, 2d term, Monday, at 3. Professor Skilton.

9.—MUSICAL COMPOSITION. Original work in modern forms. Open only to those who show talent for composition. Senior, 1st term, Wednesday, at 9. Professor Preyer.

10.—MUSICAL COMPOSITION. Continuation of course 9. These two courses are open only to those who show talent for composition. Senior, 2d term, Wednesday, at 3. Professor Preyer.

11.—CANON AND FUGUE. The various forms of canon and their use in composition. The fugue in two, three, and four parts. Analysis of Bach fugues and original work. Senior, 1st term, Wednesday, at 2. Professor Skilton.

12.—INSTRUMENTATION. The nature and treatment of the different instruments of the orchestra. The overture, symphony, cantata. Practical work for the University Orchestra. Senior, 2d term, Wednesday, at 2. Professor Skilton.

ORGAN.

Professor SKILTON.

1.—MANUAL AND PEDAL STUDIES. Merkel or Archer. Pedal scales and arpeggios, the principles of hymn playing. Sophomore, 1st term, one hour a week, by appointment.

2.—MANUAL AND PEDAL STUDIES. Buck's Studies in Pedal Phrasing; Schmidt's Organ Etudes; Bach's Little Preludes and Fugues; Flagler's The Organist's Treasury; and other selections. Sophomore, 2d term, one hour, by appointment.

3.—SERVICE AND SOLO PLAYING. Buck's Choir Accompaniment. Various styles of hymn playing, accompaniment of solo and chorus. Schneider's Pedal Studies, easier preludes and fugues of Bach and Mendelssohn. Modern pieces by Batiste, Lemmens, Guilmant, and others. Junior, 1st term, two hours, by appointment.

4.—SERVICE AND SOLO PLAYING. Arrangement of piano accompaniments for organ. Practice in accompanying singers. The easier sonatas of Mendelssohn, Merkel, Guilmant, and others. Junior, 2d term, two hours, by appointment.

5.—CHURCH AND CONCERT PLAYING. Practical work in playing the church service. The more difficult fugues and sonatas. Concert pieces by Widor, Guilmant, Saint-Saëns, Thiele, and others. Senior, 1st term, two hours a week, by appointment.

6.—CHURCH AND CONCERT PLAYING. Extemporization and

transposition. Program making. Preparation of a recital. Senior, 2d term, two hours a week, by appointment.

7.—CHURCH MUSIC. The history of church music, examination of different schools and styles. Senior, 1st term, one hour a week.

PIANOFORTE.

Professor PREYER.

Miss GREISSINGER,

Miss COOKE.

Miss MILLER.

Miss RIGHTER.

Miss WIEDEMANN.

Courses 1 to 12, inclusive, are open only to students of the School of Fine Arts. Course 13 is open only to graduates in piano.

1 and 2.—PIANO. Hanon: Virtuoso Pianist. A limited number of studies from the following: Whiting, Melodious Technical Exercises; Hoffman, etudes for the left hand; Cramer-Buelow, sixty selected etudes; Preyer, twenty etudes, op. 35 (Shirmer); Bach, two- and three-part inventions (Litolf 1742), etc. Sonatas by Haydn, Mozart, Beethoven. Selections from classic and modern compositions. Freshman, throughout the year, twice a week, by appointment. Assistants.

3 and 4.—PIANO. Czerny: Daily Exercises. Etudes, selected according to the needs of the pupil, from Clementi's Preludes and Exercises; Jensen, op. 32; MacDowell, op. 39; Haberbier, Etudes Poesies, op. 53; Bach, English Suites. Concertos by Mozart, Hummel, etc. Selections from classic and modern compositions. Sophomore, throughout the year, twice a week, by appointment. Assistants.

5 and 6.—Philipp: Daily Exercises. Clementi's Gradus ad Parnassum; Etudes from Moscheles, op. 70; Seeling, Concert Etudes, op. 10; Chopin, Preludes; Bach, Well-tempered Clavichord (Reinecke, B. and H.); concertos by Beethoven, Mendelssohn, etc.; concert pieces by classic and modern composers. Junior, throughout the year, private lessons, twice a week, by appointment. Professor Preyer.

7 and 8.—Joseffy: School of Advanced Piano Playing. Philipp, etudes for the left hand; etudes from Chopin, op. 10 and op. 25; Rubinstein, op. 23, etc. Sonatas and concertos by Beethoven, Weber, Grieg, etc. Concert pieces by modern composers. Senior, throughout the year, private lessons, twice a week, by appointment. Professor Preyer.

9 to 12.—A course for the study of pianoforte methods, aiming to develop independence of the fingers, and acquiring correct habit:

of practicing the scales, arpeggios, trills, octaves, chords, etc. Freshman and sophomore, throughout the year. Wednesday 3:30 to 4:30. Miss Greissinger.

GRADUATE COURSE.

13.—**Philipp (continued).** Modern etudes, by Liszt, MacDowell, etc.; selections from Lebert & Stark, Pianoforte School, book IV. Transcriptions of Bach's organ fugues, by Liszt, Tausig, D'Albert, etc. Modern concert pieces and concertos. Twice a week throughout the year. Professor Preyer.

PHILOSOPHY.

1.—**ELEMENTARY PSYCHOLOGY.** A part of the term, approximately one-third, is devoted to an exposition of the mental processes of deductive logic. Hyslop's Logic and Argument is used as a basis for this work. The remainder of the course is devoted to the study of the mental processes in general, and James's Psychology, Briefer Course, serves as a text. 1st and 2d terms, three hours, Monday, Wednesday, and Friday, at 9. Professor Boodin and Assistant Professor Hogg.

PHYSICAL EDUCATION.

1.—**MARCHING.** Elementary work in free-hand, dumb-bells, wands, and clubs; hygienic work on the apparatus; gymnastic games for recreation. 1st term. Assistant Professor Fish.

2.—**ADVANCED WORK IN FREE-HAND.** Calisthenics, and hygienic work on the apparatus; athletics of an all-around nature; games for skill and physical judgment. 2d term. Assistant Professor Fish.

3.—**EDUCATIONAL WORK WITH LIGHT AND HEAVY APPARATUS.** Fancy marching; games requiring skill and self-control; squad leading in calisthenics and apparatus work. 1st term. Assistant Professor Fish.

4.—**SPECIALIZING IN SOME LINE OF EXERCISE.** Fencing and broadsword; conducting games, competitions, and exhibitions. 2d term. Assistant Professor Fish.

PHYSICS.

11.—**ACOUSTICS.** A course of about twenty lectures, with demonstrations, upon the scientific basis of harmony and of painting. Required of students in the School of Fine Arts. 2d term, by appointment. Acting Professor Hill.

VIOLIN.

Miss PHIPPS.

Courses 1 to 4, inclusive, are required of all violin students.

1.—**SCHRADIECK'S FINGER TECHNIC**; Hermann's Violin School, book I; Hermann's School of Scales, book I; Kayser's Thirty-six Etudes, books II and III; violin duets by Dancla, Mazas. Viotti; selections from the simpler compositions of Hermann, Singelee, Alard, De Beriot, Dancla, Papini, Leonard, and Daube. By appointment.

2.—**HERMANN'S VIOLIN SCHOOL, BOOK II**; Scales and Technic, by Bendix and Schradieck; Hermann's School of Scales, book II; Kreutzer's Forty Studies; sonatas selected from Mozart and Handel; violin duets by Mazas; concertos from the early Italian masters; selections from the compositions of David, De Beriot, Viotti, Rode, Kreutzer, Sauret, Papini, Handel, and Bazzini. Ensemble playing. By appointment.

3.—**SCALES AND TECHNIC BY BENDIX** (continued); Hermann's School of Scales, book III; Fiorillo's Thirty-six Etudes; concertos by De Beriot, Spohr, and Mozart. Selections from the compositions of Sauret, David, Wieniawski, Hauser, Vieuxtemps, Bazzini, and Bohm; sonatas for violin and piano, selected from Beethoven, Grieg, and Tartini. Ensemble playing. By appointment.

4.—**SCALES AND TECHNIC BY SCHRADIECK**; Hermann's School of Scales, book III; Rode's Thirty-six Caprices; Dancla's Twenty Etudes; concertos by Spohr, Mendelssohn, Beethoven, and Bruch; sonatas selected from J. S. Bach; compositions by Sarasate, Hubay, Raff, Vieuxtemps, Wieniawski, Sauret, Ernst, Brahms, and Ries; violin duets by Spohr. By appointment.

VIOLONCELLO.

1 and 2.—**METHOD BY S. LEE**, op. 30; Battanchon, op. 7, suite I, book I; S. Lee, op. 31, book I. Selections by Kummer and Golterman. Freshman, 1st and 2d terms, two hours a week.

3 and 4.—**GRÜTZMACHER**, op. 65; Battanchon, op. 7, suite I, book I; S. Lee, op. 31, book II; Kummer, op. 35. Selections by Golterman, Popper, and others. Sophomore, 1st and 2d terms, two hours a week.

5 and 6;—**STUDIES BY GRÜTZMACHER**. S. Lee, op. 8; Herk, op. 20; Dotzauer. Selections by Popper, Romberg, and others. Junior, 1st and 2d terms, two hours a week, by appointment.

7 and 8.—**HERK**, op. 20. Dotzauer, Franschomme, Dupor. Con-

certos by Golterman, Romberg, and others. Sonatas by Beethoven, Mendelssohn, Rubinstein, and Grieg. Senior, 1st and 2d terms, two hours a week.

VOCAL CULTURE.

Professor HUBACH.

Mrs. LYONS.

Miss FLINTOM.

Courses 1 to 5, inclusive, are required of all students taking the four years' work in vocal culture; courses 1, 2, 3 and 5 are open to all other musical students. Course 5 is required of all Sophomores. Course 8 is required of all students wishing to graduate as teachers.

1.—TONE-PLACING. Dictation exercises for the special needs of the individual voice. Sustained tones. Breath control and the true legato. The study of conditions necessary for the poising of the voice. The Italian vowels. Technical exercises selected from Vannini, Lamperti, Sieber, Abt, Panofka, Garcia, and Shakspeare. Simple English and Italian songs. Freshman, twice a week throughout the year, by appointment.

2.—VOICE EXTENSION. Development of tone. Breath control. Exercises for flexibility from Lamperti, Nava, Concone, Vannini, Bordogni, Sieber, and Shakspeare. English and Italian ballads. German lieder. Church solos. Sophomore, twice a week throughout the year, by appointment.

3.—STUDY OF TONE COLOR. Exercises for flexibility, continued. Embellishments. Exercises from Concone, Panofka, Marchesi, Garcia, Panseron, and Rossini. German lieder, English oratorio, and church solos. Junior, twice a week throughout the year, by appointment.

4.—METHODS OF TONE-PLACING AND BREATHING. A comparative study. Exercises for bravura singing from Lamperti. Flexibility and finishing exercises from the masterpieces of vocalization. Stage deportment. Selections from Italian opera and English oratorio. Senior, twice a week throughout the year, by appointment. Professor Hubach.

5.—SIGHT-SINGING. Sound relationship. Time relationship. Rhythm. Dictation exercises. Unison, two part, three part, and four part. Professor Hubach.

6.—OPERA. Solo and chorus drill in the standard operas. Those taking this course are united with other singers from the University and city to form the school of grand opera. One presentation of opera will be given each year.

7.—ORATORIO. Solo and chorus drill in the standard works. Singers from the University and city are united to form the Festival Chorus. Presentation of oratorio will be given each year. This society annually engages a standard orchestra and eminent soloists for the spring festival.

8.—TEACHERS' COURSE. For students desiring to prepare themselves especially for teaching. Text: Manual Garcia. Professor Hubach.

IV. THE SCHOOL OF LAW.

FACULTY.

FRANK STRONG, Ph. D., President.

JAMES W. GREEN, A. M., Dean. Professor of Law.

WILLIAM L. BURDICK, Ph. D., LL. B., Professor of Law.

WILLIAM E. HIGGINS, B. S., LL. B., Professor of Law.

WILLIAM U. MOORE, Associate Professor of Law.

Special Lectures for 1907-'08.

JOHN C. POLLOCK, Judge of the United States District Court, Topeka.

J. G. SLONECKER, United States Referee in Bankruptcy, Topeka.

R. F. THOMPSON, ex-Judge of the District Court, Minneapolis.

JOHN D. MILLIKEN, attorney at law, McPherson, "The Fourteenth Amendment to the Constitution of the United States."

THOMAS A. NOFTZGER, State Senator, Anthony.

EDWIN P. GATES, ex-Judge of the Circuit Court, Kansas City, Mo., "Historical Development of the Code."

CLARENCE S. PALMER, attorney at law, Kansas City, Mo., "Municipal Charters."

EDWARD L. SCARRITT, ex-Judge of the Circuit Court, Kansas City, Mo.

SELDEN P. SPENCER, ex-Judge of the Circuit Court, St. Louis, Mo., "Ethics of the Legal Profession."

JOHN H. ADAMS, St. Louis, Mo., "Practical Fire Insurance."

ROBERT E. BALL, attorney at law, Kansas City, Mo.

PURPOSE OF THE SCHOOL.

It is the aim of the School of Law to give all its students a thorough acquaintance with the general principles of American law and to furnish a course of legal instruction that shall fit them to practice at the bar of any state of the Union, and to give those who do not expect to become practicing attorneys, but who desire to pursue certain legal subjects for their bearing upon business, such instruction as may be best suited to their needs.

DEGREE GRANTED.

The course of study of the School of Law leads to the degree of bachelor of laws (LL. B.).

SYSTEM OF INSTRUCTION.

It is believed to be proved by experience that, to be thoroughly efficient, instructional training in law courses must be given by resident teachers who give their whole time to instruction. The work of the School of Law is under the direction of four resident instructors, supplemented by lectures on special topics by competent men in the actual practice of law.

METHOD OF TEACHING.

There are in general three methods of class instruction in law—by lectures, by text-book, and by cases. The School of Law at the University does not pursue any method to the entire exclusion of the others. It uses the text-book method very largely for the beginning classes, and makes use of the lecture and case methods more largely as classes advance in the course. Experience seems to have shown, however, that the students get a clearer and more lasting knowledge of the fundamental principles of law through the study of a text-book and recitations in the classroom, together with a parallel study of cases to illustrate the principles involved.

The student is given large opportunity for free discussion of the topics in question, and is brought as close as possible into personal touch with his instructor.

WORK IN PREPARATION FOR LAW.

All persons proposing to enter upon the study of law are earnestly recommended to take first either a regular or special course in the College. A good fundamental education is necessary to a successful study of law. Especially is it necessary now when the

practitioner must come into competition with men who have had a thorough university training before they entered upon a study of law.

The College offers special work in subjects of great value as preparatory to law, in English and American constitutional and political history, constitutional law, political science, economics, sociology, history of international and common law, in rhetoric and English composition, and debating. These courses are especially recommended in preparation for law.

REQUIREMENTS FOR ADMISSION.

There are two ways of admission to the School of Law of the University: First, by certificate; second, by examination.

BY CERTIFICATE. Nearly all students enter the School of Law by certificate from high schools, academies, or other preparatory schools. The method of accrediting by certificate is the same as that in the College.

BY EXAMINATION. Candidates for admission to the Junior class of the School of Law who cannot bring certificates are required to be examined in the subjects named above. The time and place of examination are the same as in the College. (See page 81.)

SUBJECTS FOR ADMISSION.

The subjects for which entrance work may be offered, together with the number of units, are arranged in six groups, as follows, of which a total of fifteen units must be offered:

GROUP I, English.	{ English, four units.	{ Three units are required.
GROUP II, Mathematics.	{ Algebra, one and one-half units. Plane geometry, one unit. Solid geometry, one-half unit. Plane trigonometry, one-half unit. Advanced algebra, one-half unit.	{ The algebra, one and one-half units, and plane geometry, one unit, are required.
GROUP III, Foreign Languages.	{ Latin, four units. Greek, three units. German, three units. French, three units.	{ Of these, three units are required, which must be, first, in Latin, or, second, in German.

GROUP IV, Physical Sciences.	{ Physical geography, one unit. Physics, one unit. Chemistry, one unit.	{ One unit is required.
GROUP V, Biological Sciences.	{ Botany, one unit. Zoölogy, one unit. Physiology, one unit.	{ Optional.
GROUP VI, History.	{ Greek and Roman, one unit. Mediaeval and modern, one unit. English, one unit. American, one unit. Economics, one unit.	{ Two units are required.

As observed above, to secure unconditional admission to the Junior class of the School of Law, the candidate must offer fifteen units from the foregoing list of accredited preparatory subjects. Eleven and one-half units are required, as indicated; the other three and one-half units may be chosen at will from the groups.

In view of the difficulty some preparatory schools may have in expanding their courses of study so as to include all the prescribed units, until further notice candidates will be admitted unconditionally who offer fifteen units from the foregoing list, although some of the prescribed units may not have been completed. Such postponement of the completion of preparatory requirements is possible only in those subjects in which elementary courses are offered in the College. They include all the subjects in the list of preparatory studies except three units of English, two units of Latin, two and one-half units of mathematics, physical geography, and American history.

LENGTH OF LAW COURSE.

The complete course includes three years, each of which occupies eight and one-half months (excluding two weeks' recess at Christmas). The first term of the year 1907-'08 will begin on Wednesday, the 18th day of September, 1907.

COLLEGE AND SCHOOL OF LAW IN SIX YEARS.

A regular course in the College, however, is strongly recommended. During the Senior year of the College the student may elect one-half year's work from the course in the School of Law. By this arrangement, the student, by reasonable extra work, may finish both the College and the School of Law in six years.

COURSES IN LAW IN THE SUMMER SESSION.

Attention is called to the opportunity of shortening the law course, or of correcting irregularities therein, by taking such law subjects as are offered in the Summer Session of the University.

A course has been arranged which will enable a person who enrolls in a Summer Session to graduate after attending two regular sessions of the University, provided he has previously completed the preparatory work required for entrance to the Law School, as laid down in this catalogue. For such course, the student is referred to the outline of course of study in the Summer and Regular Sessions.

ADMISSION TO ADVANCED STANDING.

Persons who have previously completed a part of the course are admitted to advanced standing in the Junior and Middle classes on satisfying the Faculty as to their qualifications. No one will be so admitted to the Senior class except upon passing a satisfactory examination upon the requirements for admission, and also upon the work prescribed for the Junior and Middle classes.

Certificates of work done in other law schools of recognized standing and equivalent requirements may be received in lieu of examinations for advanced standing.

SPECIAL STUDENTS.

Opportunity is given in the School of Law for the admission of persons of mature years, who desire to pursue special work without following any prescribed course or becoming candidates for a degree.

The admission of such special students is directly under the control of the Dean of the School, whose certificate of acceptance must be presented to the Registrar before registration. Applicants for standing as special students must present satisfactory evidence of proper preparation for the studies desired and must also meet other requirements as fixed by the Faculty.

Special students are subject to the same regulations as regular students with regard to the quality of work performed and attendance at recitations and examinations.

EXAMINATIONS.

The members of each class will be examined upon each topic when completed. A final examination will be held at the end of the third year, embracing all the studies of the course. The degree of bachelor of laws will be conferred upon members of the Senior class who complete the course of study according to the requirements.

THESIS.

Each member of the Senior class who is a candidate for a degree is required to prepare and to deposit with the Faculty, at least one month before graduation, a thesis upon some legal topic selected by himself and approved by the Faculty, which thesis shall not be less than forty folios in length. The production must be satisfactory in matter, form, and style, and the student presenting it must hold himself in readiness to be examined upon the subject.

CERTIFICATE OF ATTENDANCE.

If the student does not graduate, he may, on application to the Registrar, receive an official certificate of his attendance and of the work accomplished by him in the school.

ADMISSION TO THE BAR.

The legislature of 1903 amended the statute regulating admission to the bar, and provided for state examinations by a commission appointed by the supreme court. The board of examiners meets at Topeka on the third Monday in January and June. Applications for examination and proof of qualifications must be filed with the secretary of the board at least three weeks before the examination. Printed forms of application may be obtained from A. C. Mitchell, the secretary of the board, at Lawrence.

All applicants must present high-school certificates or affidavits from teachers showing the completion of the following subjects, or pass examinations therein, to wit: three years English—grammar, rhetoric, and literature; arithmetic, algebra, geometry; general history, Roman, English and American history; civil government; the elements of physics, physical geography, botany, biology; political economy and sociology.

All candidates for admission are required to pass a written examination covering their legal qualifications. All subjects included in this examination are within the course of study of the University School of Law.

PRACTICE COURTS.

There are three practice courts in the School of Law, all of them under the immediate supervision of the member of the Faculty who devotes the major part of his time to this work. The sessions are held in the court room, which has been fitted with all of the furniture to be found in court rooms in actual practice. Ample accommodations are furnished for judge, jury, and practitioners.

THE JUNIOR PRACTICE COURT.

In the Junior year preliminary instruction is first given in the analysis of opinions, and in the preparation of cases for argument. Following this preliminary instruction, court is held under the direction of the member of the Faculty in charge. The places of attorneys, clerk, and other court officers are filled in rotation by members of the class. Cases involving statements of fact are assigned. Written briefs are required to be prepared, served upon the opposing attorneys, and submitted to a court composed of two members of the class and the member of the Faculty. Written opinions containing a full discussion of the legal questions presented are required to be handed down by the student justices.

THE MIDDLE PRACTICE COURT.

The aim of the course of the Middle year is to instruct in the preparation of cases before and after they are filed in court. To this end, statements of fact are given to the members of the class, in accordance with which trial briefs of the law and of the facts are made, and pleadings under the code are drawn. Each member of the class receives from the instructor in charge criticism of the work done. The practice of the court follows closely the practice in the district courts of Kansas. Besides this work, a course of lectures is given on instructions to juries and findings of fact. Members of the class are required to draw instructions and findings under direction of the instructor in charge of the course.

THE SENIOR PRACTICE COURT.

The work of this year is a continuation of the work of the former two years. The student is taught how to begin and prosecute a case in court. The former difficulty of originating facts in practice courts has been overcome, and all the testimony of complicated cases is placed in the hands of witnesses, who are interviewed by the attorneys assigned. The cases are then begun, prosecuted and determined as in actual practice. Juries are drawn and impaneled, the evidence produced, instructions given, verdicts and judgments rendered as in the courts of Kansas. Following this, appeals and petitions in error are prosecuted in due course to the supreme court, where briefs are filed and arguments made as in the supreme court of Kansas.

Only four attorneys are assigned to each case, and there are enough cases for all members of the class to act as trial attorneys and as attorneys in the appellate court. Every member of the Senior class is thus given an opportunity to conduct a case as in actual practice.

Instruction is also given in legal ethics and in office practice.

EXPENSES.

Each resident student entering the Law School for the first time is required by law to pay a matriculation fee of five dollars. Each Kansas student, in whatever year of the law course he may be, is required by law to pay an incidental fee of twenty-five dollars. Non-residents of Kansas pay a matriculation fee of ten dollars and an incidental fee of thirty-five dollars. Students of the School of Law may divide the payments of the incidental fee between the two terms of the school year. A diploma fee of five dollars is required at graduation.

Many students reduce their living expenses by doing light house-keeping. Board, room, light and fuel cost from three to five dollars per week. Further information about expenses may be found in connection with the College, in this catalogue.

STUDENT ORGANIZATIONS.

COOLEY CLUB. Meetings of the club occur once each week. Any student of the School of Law is eligible, but the membership is confined at present mainly to the members of the Junior and Middle classes. Legal questions are debated, and to this is added the work of the ordinary literary debating society.

KENT CLUB. The members of the Kent club are, in the main, members of the Senior class, although any student in the School of Law is eligible to membership. The work consists of the discussion of legal, economic and historical questions, and the consideration of legal literature. Debating is a prominent feature of the work of the club.

THE KANSAS LAWYER.

This is a monthly publication edited by the students of the School of Law. It is devoted to legal literature and to items of interest to the students and alumni of the school.

HONORS AND PRIZES.

By resolution, the State Bar Association of Kansas, as a recognition of the School of Law and for the purpose of encouraging its students to work along the line of legal literature, assigns a place on the literary program of the annual meeting at Topeka to that student of the Senior class who prepares the best paper on some legal topic assigned by the Law Faculty. The merits of the papers submitted are passed upon by a committee appointed for the purpose. William J. Luckey was given the honor in 1906-'07.

The Edward Thompson Company offers annually a prize of a set of the American and English Encyclopedia of Law for the best

thesis on a subject assigned by the Law Faculty. The contest is open to all members of the School of Law. Ross C. McCormick won this prize in 1906-'07.

DEBATING.

Interstate debates are held each year with Oklahoma and Iowa. Members of the two Law School clubs are chosen to represent these clubs on the debating squad of the University. This squad receives practical instruction in public speaking and debating from a committee of the general Faculty of the University. Law students are also eligible to membership in the general literary clubs of the University which are also represented in the debating squad. From this squad the debating teams for the interstate debates are chosen by competition.

EQUIPMENT.

GREEN HALL. A building for the School of Law of the University was completed during the summer of 1905. The building cost \$65,000, and is one of the most complete and best-equipped law buildings in the West. It has three floors, devoted to recitation-rooms, offices, library, and rooms for the Law School clubs. The library contains space for about 20,000 volumes, and private study-rooms for students and Faculty open into the reading-room of the library. A large room is set aside for a practice court and the best facilities possible are available for students of the law.

LIBRARIES. The law library is composed of upwards of 3000 volumes, for the exclusive use of the students of the School of Law. The library has an excellent equipment of the best law text-books, and new texts are being added constantly. It has also reports of the courts of last resort, both state and federal, as well as *Lawyers' Reports Annotated*, *American Decisions*, *American Reports*, the complete *Reporter* system, and the full reprint of the English cases. Limited space has prevented as rapid growth of the library as desired, and in the new building large additions will be made to the library equipment. In addition to the volumes devoted exclusively to law, the University library of 50,000 volumes is at the disposal of the law students. They thus have at hand the largest and best-selected scholarly library in the Southwest. The city library, housed in the Carnegie building, is also open to the students of the School of Law for books of fiction and general literature.

STATE LIBRARY. The state library, at Topeka, which is largely a law library, is easily accessible to students upon necessary occasions. Such works as may be found usually in large state libraries will therefore be at the disposal of the members of the Law School at various times during the year.

COURSES OF STUDY.

JUNIOR YEAR.

First Term (first half):

Elements of American Jurisprudence, Robinson. Daily, at 10:15.

Associate Professor Moore.

Contracts, Clark. Daily, at 11:15. Professor Green.

Practice Court. Fridays, at 1:30. Professor Higgins.

First term (second half):

Agency, Huffcut. Daily, at 9. Associate Professor Moore.

Contracts, Clark. Daily, at 11:15. (Continuation of the work of first half-term.) Professor Green.

Practice Court. Fridays, at 1:30. Professor Higgins.

Second Term (first half):

Torts, Bigelow. Daily, at 10:15. Professor Burdick.

Bailments, Goddard. Daily, at 9. Associate Professor Moore.

Sales, Burdick, and cases. Daily, at 11:15. Professor Burdick.

Practice Court. Fridays, at 1:30. Professor Higgins.

Second Term (second half):

Damages, Sedgwick. Daily, at 9. Associate Professor Moore.

Domestic Relations, Schouler, and lectures. Daily, at 11:15.
Professor Burdick.

Practice Court. Fridays, at 1:30. Professor Higgins.

MIDDLE YEAR.

First Term (first half):

Common Law Pleading, Andrews' Stephens. Daily, at 9. Professor Higgins.

Bills and Notes, Huffcut. Daily, at 11:15. Associate Professor Moore.

Practice Court. Tuesdays and Thursdays, at 10:15. Professor Higgins.

First Term (second half):

Equity Pleading, ———. Daily, at 9. Professor Higgins.

Equity, Eaton. Daily, at 10:15. Professor Burdick.

Practice Court. Tuesdays and Thursdays, at 11:15. Professor Higgins.

Second Term (first half):

Code Pleading, Phillips. Daily, at 8. Professor Higgins.
 Insurance, Richards. Daily, at 10:15. Associate Professor Moore.
 Practice Court. Tuesdays and Thursdays, at 11:15. Professor Higgins.

Second Term (second half):

Criminal Law, Hochheimer. Daily, at 9. Professor Burdick.
 Evidence, Chase's Stephen's Digest. Daily, at 10:15. Professor Green.
 Practice Court. Tuesdays and Thursdays, at 11:15. Professor Higgins.

SENIOR YEAR.*First Term (first half):*

Real Property, Tiedeman. Daily, at 9. Professor Burdick.
 Evidence, Chase's Stephen's Digest. Daily, at 10:15. Professor Green.
 Roman Law, Lectures, Justinian Institutes. Daily, at 11:15. Professor Burdick.
 Practice Court. Mondays and Wednesdays, at 1:30. Professor Higgins.

First Term (second half):

Real Property, Tiedeman. Daily, at 11:15. (Continuation of the work of the first half-term.) Professor Burdick.
 Corporations, Clark. Daily, at 9. Professor Green.
 International Law, Lawrence. Daily, at 10:15. Associate Professor Moore.
 Practice Court. Mondays and Wednesdays, at 1:30. Professor Higgins.

Second Term (first half):

Constitutional Law, Black. Daily, at 9. Professor Green.
 Corporations, Clark. Daily, at 11:15, for four weeks. Professor Green.
 Municipal Corporations, ———. Daily, at 11:15, for five weeks. Professor Green.
 Practice Court. Mondays and Wednesdays, at 1:30. Professor Higgins.

Second Term (second half):

Wills and Administrations, Underhill, first volume. Daily, at 9. Professor Higgins.
 Partnership, ———. Daily, at 10:15. Associate Professor Moore.

Constitutional Law, Black. Daily, at 11:15, for four weeks. Professor Green.

Conflict of Laws, Minor. Daily, at 11:15, for five weeks. Professor Green.

Practice Court. Mondays and Wednesdays, at 1:30. Professor Higgins.

OUTLINE OF COURSE OF STUDY.

In the Summer and Regular Sessions.

SUMMER SESSION OF 1907.—Criminal Law and Torts.

REGULAR SESSION OF 1907-'08.—Common Law Pleading, Elements of American Jurisprudence, Contracts, Equity, Equity Pleading, Bailments, Insurance, Sales, Damages, Evidence, and Domestic Relations.

SUMMER SESSION OF 1908.—Agency and Bills and Notes.

REGULAR SESSION OF 1908-'09.—Real Property, Evidence, Roman Law, Corporations, International Law, Code Pleading, Constitutional Law, Municipal Corporations, Wills, Partnership, and Conflict of Laws.

See, also, courses of law under the Summer Session.

VI. THE SCHOOL OF PHARMACY.

FACULTY.

- FRANK STRONG, Ph. D., President.
- LUCIUS E. SAYRE, Ph. M., Dean. Professor of Pharmacy.
- EPHRAIM MILLER, Ph. D., Professor of Mathematics.
- EDGAR H. S. BAILEY, Ph. D., Professor of Chemistry.
- ERASMUS HAWORTH, Ph. D., Professor of Mineralogy.
- WILLIAM C. STEVENS, M. S., Professor of Botany.
- HENRY B. NEWSON, Ph. D., Professor of Mathematics.
- IDA H. HYDE, Ph. D., Professor of Physiology.
- MARSHALL A. BARBER, A. M., Professor of Cryptogamic Botany and Bacteriology.
- ROBERT K. DUNCAN, A. B., Professor of Industrial Chemistry.
- WILLIAM E. HIGGINS, LL. B., Professor of Law.
- RAPHAEL D. O'LEARY, A. B., Associate Professor of English.
- ELMER F. ENGEL, A. M., Associate Professor of German.
- MARTIN E. RICE, M. S., Associate Professor of Physics.
- L. D. HAVENHILL, Ph. M., Secretary. Associate Professor of Pharmacy.
- JOHN N. VAN DER VRIES, Ph. D., Associate Professor of Mathematics.
- RALPH E. BASSETT, A. M., Associate Professor of French.
- MARGARET LYNN, A. M., Assistant Professor of English.
- CHARLES H. ASHTON, A. M., Assistant Professor of Mathematics.
- DAVID F. MCFARLAND, M. S., Assistant Professor of Chemistry.
- ALMA LE DUC, Ph. B., Assistant Professor of French.
- CHARLES M. STERLING, A. B., Assistant Professor of Pharmacognosy.
- GEORGE F. KAY, A. M., Assistant Professor of Mineralogy.
- ROBERT W. CURTIS, Ph. D., Assistant Professor of Chemistry.
- HERBERT H. VAUGHAN, Ph. D., Assistant Professor of French.
- HERBERT W. EMERSON, B. S., Assistant Professor of Pharmacy.
- ADOLPH ZIEFLE, Assistant Professor of Pharmacy.

SCOPE OF THE SCHOOL.

The object of this school is to give its students a thorough practical training in all of those branches connected with the pharmaceutical profession in its various departments. A special emphasis is purposely placed upon chemistry, as this is the foundation of all pharmaceutical work. In the department of pharmacognosy there are offered facilities which are deemed adequate to this important branch of pharmacy and medicine.

The three courses offered by the school are arranged logically and progressively; the instruction is given according to modern methods, and in the spirit of those principles which, in their application to other classes of modern technical schools, have proved so eminently successful.

DEGREES. The courses of study in the School of Pharmacy lead to the following degrees:

Bachelor of science.

Pharmaceutical chemist.

REQUIREMENTS FOR ADMISSION.

There are two methods of admission to the School of Pharmacy: First, by examination; second, by certificate.

BY EXAMINATION. Times and place of examination for subjects required for admission to the School of Pharmacy will be found in the General Catalogue, page 81, under "The College."

BY CERTIFICATE. Candidates may enter the School of Pharmacy on certificates from the schools indicated by the next paragraph. The plan of entrance by certificate, noted under "The College" in the General Catalogue is followed.

FOR THE TWO- AND THREE-YEAR COURSES.

Candidates for admission to these courses must present certificates of graduation from accredited schools, or, in lieu of this, must present certificate covering work equal to that covered by graduation from the eighth grade of a grammar-school in arithmetic, United States history, geography, English grammar, and civil government, and, in addition, either be examined in, or present certificates from high schools, academies or colleges for, physics, Carhart and Chute, or equivalent, and Latin, Bennett's Latin Grammar, or equivalent.

The subjects in which the student may be deficient may be made up during the first year of attendance, either in a special class or at the Lawrence high school.

FOR THE FOUR-YEAR COURSE.

Candidates for admission to the four-year course must conform, by examination or certificate, to the requirements for entrance to the Freshman year of the College. See General Catalogue, p. 83.

SPECIAL STUDENTS.

Special students, not candidates for a degree, may be admitted to the School of Pharmacy without conforming to the requirements for entrance. The admission of such students is under the control of the Dean, and his certificate of recommendation must be procured before the student presents himself to the Registrar.

EXPENSES.

By legislative enactment, a matriculation fee of five dollars (to be paid but once) must be charged each student of Kansas entering the School of Pharmacy. All students are required to pay an incidental fee of twenty-five dollars. Non-residents of Kansas must pay a matriculation fee of ten dollars and an incidental fee of thirty-five dollars. If the student so elects, one-half of the incidental fee may be paid at the beginning of each term. A fee of five dollars is required for diploma.

LABORATORY SUPPLIES. All the laboratories of the University and their equipment of power, engines, machinery, light, desks, tables, balances, microscopes, models and complete apparatus are at the disposal of students, under the direction of their instructors, free of cost. These desks, benches and tables will be further provided with individual sets of tools, sets of working apparatus and equipment, for the care of which the student will be held responsible and will be required to return in good condition. Students are requested to check these up at time of entering a laboratory course, to see that they get all that are charged to them. At the end of the course, or at the discretion of the instructor, all the individual equipment in good order must be returned. Such as may have been lost, damaged, broken or destroyed by the student must be paid for by him at that time.

Material of every kind consumed, ground up or used in the manifold experiments and practices in laboratories must be paid for by the student, but may be secured where the student elects. Students providing themselves with the exact change may obtain this of the storekeeper in any quantity at the various department store-rooms at its cost. For the economic and prompt supply of such material, coupon books, good in all departments, are furnished at the business office in amounts of five dollars and two dollars. Any

coupons unused are redeemable in cash at the Secretary's office at the end of the course.

OTHER EXPENSES. There are no dormitories connected with the University. Students find accommodations in the boarding-houses and homes in Lawrence. Information concerning the location of rooming- and boarding-places may be had at the office of the Registrar.

The average price of board, rooms, light and fuel may be placed at \$3.75 a week. Some persons who furnish plain rooms and good, plain food receive boarders at \$3 or even \$2.50 a week. Day board in private families and at city restaurants may be obtained for \$2.50 to \$3 a week. Day board in clubs varies from \$2.25 to \$3 a week. Furnished rooms, usually occupied by two students, range from \$4 to \$15 a month. Unfurnished rooms rent for \$1.50 to \$3 a month. Students who can supply their own furniture and buy and prepare provisions for the table themselves can attend the University for very little cost in money.

The following table shows the estimated expenses of a student of the School of Pharmacy for a year, excluding clothing and traveling expenses; the expense varies with the course pursued, and also depends upon the tastes and habits of the student:

	<i>Low.</i>	<i>Average.</i>
Board.....	\$80 00	\$120 00
Room.....	20 00	30 00
Books and stationery.....	10 00	20 00
Laundry.....	8 00	20 00
Matriculation and other fees }	30 00	30 00
Incidentals.....	15 00	50 00
Totals.....	\$163 00	\$270 00

SELF-HELP. Many students find work in private families, in offices, and in various occupations, by means of which they defray a portion of their expenses. Some students have earned their entire expenses while in attendance, and have made good records at the same time; other students have done so much work that they have not been able to keep up their studies, and have thus missed the one thing for which they came. If it is possible for the student to have a part of his expenses paid, he should not attempt to earn his way entirely by his own exertions. It is comparatively easy for a young man to earn half his living while attending the University and yet do good work in his classes. The student should bring with him at least enough money to live comfortably for a few weeks, until he finds something to do. The University cannot guarantee work to any student, but will lend every possible assistance in

finding employment. The University Christian Associations maintain employment bureaus, where the names of those seeking work and of those desiring workers are recorded. Students desiring places where they may help themselves are advised to apply to the University Y. M. C. A. or Y. W. C. A., or to the Registrar, University of Kansas, Lawrence.

THE PHARMACEUTICAL SOCIETY.

This society was organized in December, 1886, by the students and instructors of the department, for the purpose of assisting each other in the study of sciences especially related to the art of pharmacy, in the practical applications of the same, and for friendly intercourse. Meetings are held biweekly during the school year.

POSITIONS FOR GRADUATES.

As an adjunct to the Pharmaceutical Society, an "annex" was established in 1890, whose aim it is to secure positions for graduates, and clerks for employers, who are graduates of the school. These graduates, now numbering more than 300, are occupying important positions. The majority of them are located in Kansas and adjoining states. The demand for registered graduates at salaries ranging from \$60 to \$125 per month has, for several years past, been far greater than the school can supply.

LIBRARY.

The school possesses an extensive library, and is the regular recipient of the leading pharmaceutical journals and periodicals of America, England, Germany, and France.

For the convenience of students in chemistry and pharmacy, a branch library is provided in the building and adjacent to the chemical and pharmaceutical laboratories, where all the principal reference books and periodicals may be found.

COLLECTIONS.

The Pharmacy School possesses an extensive herbarium of medicinal plants, together with a collection of photographs representing nearly 200 species. This, in conjunction with the large herbarium of the botanical department, is available to students. Several hundred microscopical slides are at hand for use with the projection lantern, showing various drugs in cross and longitudinal section, as well as in powdered form; a large assortment of lantern slides, illustrating plants, drugs, prescriptions, pharmacies, and places and subjects of pharmaceutical interest; several cases of crystal models; an extensive collection of official and unofficial salts, alkaloids, drugs

and medicines, besides numerous smaller collections of particular interest.

LOCATION AND EQUIPMENT.

The School of Pharmacy occupies the first two floors and basement of the east wing of the Chemistry and Pharmacy Building, located in the northwest corner of the campus.

The basement of the pharmacy department contains two research laboratories and the general pharmacy stock-room. The contents of this room are invoiced under the direction of an instructor, every year, by students, as a part of their business training and as a part of their practical drug-store work.

On the first floor are the two large general laboratories, balance-room, supply-room and the office and private laboratory of the Junior assistant. The Junior laboratory accommodates sixty students and is equipped with desks, lockers, and individual gas- and water-supplies. The Senior laboratory is similarly equipped and accommodates fifty-six students. Opening from this on the east is a special balance-room, provided with analytical balances for the exclusive use of the pharmacy students. The supply-room is conveniently located between the two laboratories. All the material necessary for the special courses in pharmacy can be obtained here.

The offices and private laboratories of the Dean and the secretary, the lecture-room, museum of pharmacognosy and the prescription research laboratory are on the second floor.

The lecture-room, with a seating capacity of 100, is provided with a large lecture-table and abundantly supplied with special pharmaceutical apparatus. The museum of pharmacognosy is directly above the Senior laboratory, and is devoted to the branches of pharmacognosy, pharmacal botany, and microscopy. Ample material is supplied for elucidation of these three important branches of modern pharmacy. In this room is one of the latest improved Bausch & Lomb stereopticons, with microscopical projection attachment, an instrument indispensable to the proper treatment of these subjects.

The prescription research laboratory is located at the rear of the lecture-room, and is equipped after the manner of a regular prescription pharmacy. It is furnished with a thirty-foot work-table provided with gas and water, three large double prescription cases each differing in style and manner of equipment, and fifty feet of tincture shelving. On these shelves are found various patterns of shop-bottles offered to American pharmacists. The entire equipment of the room has been carefully selected, with a view to give comprehensive and varied instruction. In this room practical train-

ing is given in the preparation of medicines and the compounding of difficult prescriptions.

Laboratory instruction for pharmacy students is also given in the laboratories of the following departments: Chemistry, botany, mineralogy, physiology, and physics.

APPARATUS.

For the various practical courses offered by this school a large amount of laboratory apparatus, of domestic and foreign types, is supplied. The various laboratories are equipped for manufacturing purposes, so that any preparation of the United States Pharmacopoeia can be made by any of the official methods, and, in addition, appliances and materials are at hand for the unofficial and extra-pharmacopoeial products.

The lecture-table is abundantly supplied with illustrative apparatus, so that the student may see before him the various processes in operation which may be carried on in the laboratories and at the prescription counters. Every attention has been given to illustrate pharmacy in all its phases.

The following is a partial list of special apparatus: Bausch & Lomb projection lantern and stereopticon, Laurent half-shade polariscope, Zeiss saccharimeter, spectroscope, refractometer; microscopes: Bausch & Lomb, Spencer, Leitz, etc.; balances: analytical, prescription, counter, solution, torsion, specific gravity, etc.; hydrometers, Beaume and specific gravity, single and in sets; lactometers, urinometers, alcoholmeters, etc.; microtomes, nitrometers, combustion furnaces; Bunsen burners, various patterns; pharmaceutical stills, apparatus for fractional distillation and evaporation *in vacuo*, tablet machines, suppository molds and presses, drug-mills, special percolators and apparatus for hot and cold extraction, continuous extractors, pill-machines, coaters, etc.

REGISTRATION WITH THE STATE BOARD OF PHARMACY.

Graduates of the School of Pharmacy may become registered pharmacists in Kansas without examination upon presenting to the State Board of Pharmacy satisfactory evidence of having had the required amount of practical experience. The practical experience required for the different courses is as follows:

Two and one-half years for graduates of the two-year course.

Twenty-one months for graduates of the three-year course.

One year (twelve months) for graduates of the four-year course.

COURSES OF STUDY.

The School of Pharmacy offers three complete courses of study, one of two years and one of three years—both leading to the degree of pharmaceutical chemist—and one of four years, leading to the degree of bachelor of science.

THE TWO-YEAR COURSE.

This is the regular course in pharmacy, first established by an act of the legislature, which leads to the degree of pharmaceutical chemist (Ph. C.). The curriculum is confined to pharmaceutical subjects, and prepares directly for drug-store and dispensing work. The higher work of the other courses gives greater breadth of training, and prepares students for service with larger concerns and with manufacturing chemists.

THE THREE-YEAR COURSE.

This course is indorsed by the Kansas Pharmaceutical Association, and is especially recommended to those students who have had no drug-store experience, and to those who desire to avail themselves of the social advantages offered to college students. Special opportunities are offered in this course for work in the field of drug standardization and analysis. The course leads to the degree of Ph. C., and, besides the diploma, a special certificate of proficiency is issued by the Dean upon the completion of the course of study outlined.

THE FOUR-YEAR COURSE.

This course, leading to the degree of bachelor of science, from which the student graduates on a plane with the regular students of the College, opens the door, as does the bachelor of arts degree, to the degree of master of arts or doctor of philosophy, should the student desire to pursue his studies to that extent, and thus prepare himself for the higher calling of educational work.

TWO-YEAR COURSE.

LEADING TO THE DEGREE OF PHARMACEUTICAL CHEMIST.

JUNIOR YEAR.

First Term:

Pharmaceutical Botany, (a and b), 8 to 10. Mr. Sterling.

Introductory Pharmacy, (a and b), 10:15 to 11:15. Mr. Havenhill.

Introductory Chemistry, (a and b), 1:30 to 3:30. Mr. Curtis.

Second Term:

Galenical Preparations, (*a* and *b*), 8 to 10. Mr. Havenhill.
 Official Pharmacy, (*a*), 10:15 to 11:15. Mr. Havenhill.
 Inorganic Medicinal Salts, (*b*), 10:15 to 11:15. Mr. Havenhill.
 Pharmacognosy, (*a* and *b*), 11:15 to 12:15. Mr. Sterling.
 Pharmacy Qualitative Analysis, (*a* and *b*), 1:30 to 3:30. Mr. McFarland.

SENIOR YEAR.

First Term:

Physiology, (*a*), 8 to 10. Professor Hyde.
 Pharmaceutical Testing, (*b*), 8 to 10. Mr. Havenhill.
 Vegetable Histology and Study of Powdered Drugs, (*a* and *b*), 10:15 to 12:15. Mr. Sterling.
 Theory and Practice of Pharmacy and Pharmaceutical Chemistry, (*a* and *b*), 2:30 to 3:30. Professor Sayre.
 Pharmacy Quantitative Analysis, (*a*), 3:30 to 5:30. Mr. Curtis.
 Mineralogy, (*b*), 3:30 to 5:30. Mr. Kay.

Second Term:

Plant Analysis, (*a*), 8 to 10. Professor Sayre and Mr. Emerson.
 Physiological Chemistry, (*b*), 8 to 10. Professor Sayre and Mr. Emerson.
 Organic Materia Medica and Pharmacology, (*a* and *b*), 11:15 to 12:15. Professor Sayre.
 Toxicology, 11:15, Fridays. Professor Bailey.
 Dispensing, (*a*), 1:30 to 3:30. Professor Sayre and Mr. Havenhill.
 Organic Chemistry, (*a* and *b*), 3:30 to 5:30. Professor Duncan.
 Thesis, (*b*), 1:30 to 3:30.

THREE-YEAR COURSE.

LEADING TO THE DEGREE OF PHARMACEUTICAL CHEMIST.

SOPHOMORE YEAR.

First Term:

Pharmaceutical Botany, (*a* and *b*), 8 to 10. Mr. Sterling.
 Introductory Chemistry, (*a* and *b*), 1:30 to 3:30. Mr. Curtis.
 Rhetoric and English Composition, (*a* and *b*), 4:30, two hours per week. Miss Lynn.

Second Term:

Rhetoric and English Composition, (*a* and *b*), 4:30, three hours per week. Miss Lynn.
 Pharmacognosy, (*a* and *b*), 11:15 to 12:15. Mr. Sterling.
 Pharmacy Qualitative Analysis, (*a* and *b*), 1:30 to 3:30. Mr. McFarland.

JUNIOR YEAR.

First Term:

Introductory Pharmacy, (*a* and *b*), 10:15 to 11:15. Mr. Havenhill.

Physiology, (*a*), 8 to 10. Professor Hyde.

Pharmaceutical Testing, (*b*), 8 to 10. Mr. Havenhill.

Pharmacy Quantitative Analysis, (*a*), 3:30 to 5:30. Mr. Curtis.

Mineralogy, (*b*), 3:30 to 5:30. Mr. Kay.

Second Term:

Galenic Preparations, (*a* and *b*), 8 to 10. Mr. Havenhill.

Official Pharmacy, (*a*), 10:15 to 11:15. Mr. Havenhill.

Inorganic Medicinal Salts, (*b*), 10:15 to 11:15. Mr. Havenhill.

Organic Chemistry, (*a* and *b*), 3:30 to 5:30. Professor Duncan.

SENIOR YEAR.

First Term:

Pharmaceutical Testing, (*a*), 8 to 10. Mr. Havenhill.

Alkaloidal Analysis, (*b*), 8 to 10. Mr. Havenhill.

Vegetable Histology and Study of Powdered Drugs, (*a* and *b*), 10:15 to 12:15. Mr. Sterling.

Theory and Practice of Pharmacy and Pharmaceutical Chemistry, (*a* and *b*), 2:30 to 3:30. Professor Sayre.

Second Term:

Plant Analysis, (*a*), 8 to 10. Professor Sayre and Mr. Emerson.
Physiological Chemistry, (*b*), 8 to 10. Professor Sayre and Mr. Emerson.

Toxicology, 11:15, Fridays. Professor Bailey.

Organic Materia Medica and Pharmacology, (*a* and *b*), 11:15 to 12:15. Professor Sayre.

Dispensing (*a*), 1:30 to 3:30. Professor Sayre and Mr. Havenhill.

Thesis, (*b*), 1:30 to 3:30.

FOUR-YEAR COURSE.

LEADING TO THE DEGREE OF BACHELOR OF SCIENCE.

(Sequence of studies recommended.)

FRESHMAN YEAR.

Rhetoric and English, five hours.

Algebra and Trigonometry, five hours.

Introductory Chemistry and Qualitative Analysis, ten hours.

German, ten hours.

SOPHOMORE YEAR.

General Physics, five hours.
French, ten hours.
Analytical Geometry,* five hours.
Quantitative Analysis, five hours.
Bacteriology, five hours.

JUNIOR YEAR.

Physical Measurements,* five hours.
Pharmaceutical Botany, five hours.
Introductory Pharmacy, five hours.
Pharmacognosy, five hours.
Official Pharmacy and Inorganic Medicinal Salts, five hours.
Organic Chemistry, five hours.
Galenical Preparations, five hours.

SENIOR YEAR.*First Term:*

Microscopical Botany and Examination of Powdered Drugs,
five hours.
Theory and Practice of Pharmacy and Pharmaceutical Chem-
istry, five hours.
Mineralogy, two and one-half hours.
Physiology, two and one-half hours.
Pharmaceutical Testing, two and one-half hours.

Second Term:

Plant analysis, two and one-half hours.
Physiological Chemistry, two and one-half hours.
Organic Materia Medica and Pharmacology, five hours.
Toxicology, one hour.
Dispensing, two and one-half hours.
Alkaloidal Analysis, two and one-half hours.
Thesis, two and one-half hours.

* For these may be substituted courses of similar length and grade in the departments of language, biology, or chemistry.

COURSES OF INSTRUCTION.

BOTANY AND PHARMACOGNOSY.

Professor STEVENS.

Professor SAYRE.

Associate Professor BARBER.

Associate Professor HAVENHILL.

Assistant Professor STERLING.

1.—PHARMACAL BOTANY. Five hours credit. An introduction to morphology and taxonomy of phanerogams, vegetable histology and microchemical technique. Laboratory work, recitations, and lectures. Junior, 1st term, 8 to 10. Assistant Professor Sterling.

2.—ELEMENTARY STRUCTURAL BOTANY. Five hours credit. A study of the structure of phanerogams, with a brief introduction to fungi, algæ, mosses, and ferns. The use of a manual; field-studies. Laboratory work and lectures. 2d term, (*a* and *b*), 1:30 to 3:30. Professor Stevens, Assistant Professor Sterling, and assistant.

3.—VEGETABLE HISTOLOGY. Five hours credit. A study of plant tissues, with special reference to their development and functions; histological technique. Laboratory work and lectures. Open to students who have taken course 2 or its equivalent. 1st term, (*a* and *b*), 1:30 to 3:30. Professor Stevens and assistant.

4.—VEGETABLE HISTOLOGY AND STUDY OF POWDERED DRUGS. Five hours credit. A study of the plant tissues; histological technique and the structural characteristics of the official drugs; the preparation of specimens and the analysis of powdered drugs. Open to all students who have had courses 1 or 3. Laboratory work and lectures. 1st term, (*a* and *b*), 10:15 to 12:15. Assistant Professor Sterling.

5.—BACTERIOLOGY. Five hours credit. Bacteriological technique. Pathogenic bacteria and other forms of economic importance. Laboratory work, reading, and lectures. 2d term, (*a* and *b*), 8 to 10. Associate Professor Barber.

6.—PHARMACOGNOSY. Five hours credit. A study of the geographical distribution, origin and physical characteristics of crude drugs. Lectures, recitations, and laboratory work. Junior, 2d term, at 11:15. Associate Professor Havenhill and Assistant Professor Sterling.

CHEMISTRY.

Professor BAILEY.

Professor SAYRE.

Professor DUNCAN.

Associate Professor HAVENHILL.

Assistant Professor MCFARLAND.

Assistant Professor CURTIS.

Assistant Professor BUSHONG.

Assistant Professor EMERSON.

Assistant Professor ZIEFLE.

1.—INTRODUCTORY CHEMISTRY. Five hours credit. A study of the chemical elements and their compounds. Experimental lectures, recitations, and laboratory work. Junior, 1st term, (*a* and *b*), 1:30 to 3:30. Assistant Professor Bushong and assistants.

2.—PHARMACY QUALITATIVE ANALYSIS. Five hours credit. The isolation and identification of the important elements from mixtures and compounds. Text-book, Bailey and Cady's Guide to the Study of Qualitative Analysis. Must be preceded by course 1 or College courses 1 and 2. Lectures and laboratory work. Junior, 2d term, (*a* and *b*), 1:30 to 3:30. Assistant Professor McFarland.

3.—PHARMACY QUANTITATIVE ANALYSIS. Two and one-half hours credit. A course especially adapted to the needs of the pharmacist, involving the simpler methods of gravimetric and volumetric analysis. Lecture and laboratory work. Must be preceded by course 2. Senior, 1st term, (*a*), 3:30 to 5:30. Professor Bailey and Assistant Professor Curtis.

4.—QUANTITATIVE ANALYSIS. (Course 8 in College.) Five hours credit. A course similar to 3, extending over whole term. 1st term, (*a* and *b*), 3:30 to 5:30. Professor Bailey and Assistant Professor Curtis.

5.—ORGANIC CHEMISTRY. (Course 16 in College.) A study of the hydrocarbons and their derivatives. Lectures and recitations, Monday, Wednesday, and Friday; laboratory work, Tuesday and Thursday. Must be preceded by course 1. Senior, 2d term, (*a* and *b*), 3:30 to 5:30. Professor Duncan and assistant.

*6.—PHARMACEUTICAL TESTING I. Two and one-half hours credit. Laboratory practice in testing the purity and strength of the inorganic medicinal chemicals of the United States Pharmacopœia. Must be preceded by course 3 or equivalent. 1st term, (*b*), 8 to 10. Associate Professor Havenhill.

*7.—PHARMACEUTICAL TESTING II. Two and one-half hours

*Courses 6, 7, 12 and 13 are especially recommended for those students who are preparing themselves for responsible positions as registered pharmacists; as proprietors of pharmacies, and as pharmaceutical chemists; for special work in analysis of

credit. Laboratory practice in testing the purity and strength of the organic drugs and the preparations of the United States Pharmacopœia. Must be preceded by course 3 or equivalent. Associate Professor Havenhill.

8.—PHYSIOLOGICAL CHEMISTRY. Two and one-half hours credit. A brief course adapted to the needs of the pharmacist, including the study of the carbohydrates, proteins, normal and abnormal products of animal life. Analysis of various secretions, urinalysis, etc. Laboratory work and lectures. Must be preceded by course 1. Senior, 2d term, (b), 8 to 10. Professor Sayre and Assistant Professor Emerson.

9.—PHYSIOLOGICAL AND MEDICAL CHEMISTRY. Five hours credit. This course is offered to meet the requirements of medical students. Products of physiological interest are separated from animal tissues and organs and studied in detail. Special attention is given to the study of carbohydrates, proteins, and the normal and abnormal products of animal life. The second part of the course consists of five weeks of urinalysis, embracing lectures, recitations, and work in both chemical and microscopical laboratories. 2d term, 1:30 to 2:30. Professor Sayre and Assistant Professor Emerson.

10.—ADVANCED WORK IN PHYSIOLOGICAL CHEMISTRY. Analysis of such dietetics as are used in medicine and the quantitative estimation of digestive ferments; the preparation of proximate constituents from animal tissues. Must be preceded by course 8, and is open to all students who have passed that subject. Professor Sayre and Assistant Professor Emerson.

11.—PLANT ANALYSIS. Two and one-half hours credit. The separation and estimation of the proximate principles of plant drugs. 2d term, (a), 8 to 10. Professor Sayre and Assistant Professor Emerson.

*12.—ALKALOIDAL ANALYSIS. Two and one-half hours credit. A systematic study of the official alkaloids including their identification and estimation by physical and chemical means. Lectures and laboratory work. Must be preceded by course 3 or equivalent. Associate Professor Havenhill.

*13.—DRUG ASSAYING. Two and one-half hours credit. Advanced work in the valuation and standardization of drugs. A research course, consisting of lectures, laboratory and library work, designed especially for those who desire to do advanced work in

drugs and medicines, now regulated by the pure food and drugs law. The demand for pharmaceutical chemists in large establishments is one that the school will aim to supply, and the courses referred to will prepare students to occupy such positions.

the subject. By appointment. Professor Sayre and Associate Professor Havenhill.

14.—PLANT ANALYSIS. A systematic course of advanced work in the analysis of the chemical constituents of plants. Professor Sayre.

15.—ANALYSIS OF NOSTRUMS. Determination of composition of articles with secret formulas. Professor Sayre.

ENGLISH.

Assistant Professor BRYANT.

Assistant Professor GRAY.

Assistant Professor GARDNER.

1.—RHETORIC AND ENGLISH COMPOSITION. Outlines of rhetoric, with exercises and themes. Required of all Freshmen in the four-year course in the School of Pharmacy. 1st term, two hours, Tuesday and Thursday, at 8, 9, 10:15, 11:15, 3:30, 4:30; 2d term, three hours, Monday, Wednesday, and Friday, at 8, 9, 10:15, 11:15, 2:30, and 3:30, and at other hours to be arranged. Assistant Professors Bryant, Gray, Gardner, and instructors.

FRENCH.

Assistant Professor LE DUC.

Assistant Professor NEUEN SCHWANDER.

Assistant Professor SCHOCH.

1.—ELEMENTARY COURSE. Five hours. Grammar (Fraser and Squair) and easy reading. Drill in pronunciation and in forms. 1st term. Five divisions. Daily, at 8, 9, 10:15, 11:15, or 1:30. Assistant Professor Le Duc, Assistant Professor Neuen Schwander, or Assistant Professor Schoch. Prerequisite: Three years of Latin or three years of German.

2.—ELEMENTARY COURSE. Five hours. A continuation of course 1. Reading of simple prose texts, with exercises in dictation and elementary composition. 2d term, daily, at 11:15. Assistant Professor Le Duc, Assistant Professor Neuen Schwander, or Assistant Professor Schoch.

GERMAN.

Associate Professor ENGEL.

Assistant Professor CORBIN.

1.—OUTLINE OF GRAMMAR. Five hours. The first twenty-four lessons of Otis, with composition exercises. Carruth's Reader, about fifty pages. 1st term, daily, at 8, 9, 10:15, 11:15, 1:30, and 2:30; 2d term, daily, at 1:30. Associate Professor Engel or Assistant Professor Corbin.

2.—CARRUTH'S READER, completed, ZSCHOKKE, KLEIST, HEYSE (100 pp.), and SCHILLER'S WILHELM TELL (complete). Five hours. Also special exercise in word order and auxiliary verbs and sight-reading. 2d term, daily, at 8, 9, 11:15, and 1:30; 1st term, daily, at 2:30. Associate Professor Engel or Assistant Professor Corbin.

3.—REVIEW OF GRAMMAR. Five hours. Freytag's *Die Journalisten*. Geschichte des 30-jährigen Krieges. Outline of German literature in dictations and lectures. Sight-reading. 1st term, daily, at 8, 9, 10:15, 11:15, 1:30, and 3:30; 2d term, daily, at 9. Associate Professor Engle or Assistant Professor Corbin.

MATHEMATICS.

Professor NEWSON.

Associate Professor VAN DER VRIES.

Assistant Professor ASHTON.

2.—ALGEBRA. Quadratic equations, radicals, exponents, fundamental principles of logarithms, and use of logarithmic tables. Wentworth's College Algebra, revised. Three hours, both terms, Monday, Wednesday, Friday: 1st term, 8, 9, 10:15, 11:15, 2:30, and 3:30; 2d term, 9, 11:15, and 3:30. (1) SOLID GEOMETRY, Wentworth's Geometry. Three hours, 2d term, Monday, Wednesday, and Friday, at 1:30. Or (3) PLANE TRIGONOMETRY, Miller's Trigonometry. Two hours, both terms, Tuesday and Thursday: 1st term, at 8, 9, 10:15, 11:15, 2:30, and 3:30; 2d term, at 9, 11:15, 2:30, and 3:30. Assistant Professor Ashton.

4.—ANALYTIC GEOMETRY. Elements of plane analytics, including the geometry of the conic sections, and an introduction to solid analytics. Tanner and Allen's Analytic Geometry or Ashton's Analytic Geometry. Two hours, both terms: 1st term, at 10:15 and 11:15; 2d term, at 8, 9, 10:15, 2:30, and 3:30. Professor Newson, Associate Professor Van der Vries, and assistant.

MINERALOGY.

Assistant Professor KAY.

1.—ELEMENTARY MINERALOGY. Two and one-half hours credit. An abridgement of course 1, the College, including principally crystallography, blowpipe analysis, and a study of ores. 1st term, (b), 3:30 to 5:30. Assistant Professor Kay.

PHARMACY AND MATERIA MEDICA.

Professor SAYRE.

Professor BAILEY.

Associate Professor HAVENHILL.

Assistant Professor EMERSON.

1.—INTRODUCTORY PHARMACY. Five hours. A study of the subject of weights, measures, specific gravity; the processes employed in the preparation of medicines and the principles of pharmaceutical arithmetic. Lectures and recitations. 1st term, (*a* and *b*), 10:15 to 11:15. Associate Professor Havenhill.

2.—OFFICIAL PHARMACY. Two and one-half hours credit. A systematic study of the official preparations, including their classification, preparation, and preservation. Must be preceded by course 1. Lectures and recitations. 2d term, (*a*), 10:15 to 11:15. Associate Professor Havenhill.

3.—GALENICAL PREPARATIONS. Five hours credit. Practical work in the manufacture of standard medicinal preparations, as contained in the pharmacopœia and national formulary. Laboratory work and recitations. Must be preceded by course 1. Junior, 2d term, (*a* and *b*), 8 to 10. Associate Professor Havenhill.

4.—INORGANIC MEDICINAL SALTS. Two and one-half hours credit. The source, manufacture, physical properties, general and specific characteristics and identity of inorganic substances used in medicine. Lectures, recitations, and laboratory work. Must be preceded by introductory chemistry. Junior, 2d term, (*b*), at 10:15. Associate Professor Havenhill.

5.—THEORY AND PRACTICE OF PHARMACY AND PHARMACEUTICAL CHEMISTRY. Five hours credit. A critical review of the preparations of the U. S. Pharmacopœia; methods of identification; tests for impurities and detection of adulterations occurring in medicinal salts; organic, inorganic and synthetical remedies. Lectures and recitations. Senior, 1st term, (*a* and *b*), at 2:30. Professor Sayre.

6.—ORGANIC MATERIA MEDICA AND PHARMACOLOGY. Four hours. The classification, physical description, chemical constitution of the crude drugs of the pharmacopœias; their chemical and physiological properties, therapeutic application; methods of prescribing and dispensing; the action of organic and inorganic chemicals and their physiological relationships. Lectures and recitations. Senior, 2d term, (*a* and *b*), Monday, Tuesday, Wednesday, and Thursday, at 11:15. Professor Sayre.

7.—TOXICOLOGY. One hour. Lectures on the sources, properties, methods for detection and antidotes for poisons. Must be preceded by introductory chemistry. Senior, 2d term, 11:15, Fridays. Professor Bailey.

8.—DISPENSING. Two and one-half hours credit. Compounding of prescriptions and a practical study of incompatibilities. Lectures and laboratory work. Senior, 2d term, (a), 1:30 to 3:30. Professor Sayre and Assistant Professor Havenhill.

9.—THESIS. Two and one-half hours credit. Original research in one of the subjects connected with the pharmaceutical profession. An outline of the work should be presented to the Dean by the middle of the second term. Senior, 2d term, (b), 1:30 to 3:30.

10.—LIBRARY WORK. Specially designed to familiarize the student with pharmaceutical literature; will include exercises in indexing and reviewing various topics. 2d term, (b), hours by appointment. Professor Sayre.

11.—PRACTICAL EXERCISES. Two and one-half hours credit. These will include the care of the prescription room, stock-taking, etc. Must be preceded by courses 1 and 4, and pharmacognosy. By appointment. Associate Professor Havenhill.

12.—Manufacture of artificial fruit essences and other compound ethers. Professor Sayre.

13.—PHARMACEUTICAL JURISPRUDENCE. Relating to the laws pertaining to pharmacy in different states, and to the laws pertaining to the mercantile business, together with practical business suggestions. A course of not less than ten lectures, given in connection with the Pharmaceutical Society. Hours by appointment. Associate Professor Higgins.

14.—INTRODUCTORY PHARMACOLOGY. A special course designed to meet the needs of medical students, comprising weights, measures and processes used in the preparation of medicines; the geographical distribution, physical properties and identification of crude drugs. Lectures, recitations, and laboratory work. 1st term, (a), 1:30 to 3:30. Associate Professor Havenhill.

PHYSICS.

Professor BRUCE V. HILL.
Assistant Professor STIMPSON.

1.—PROPERTIES OF MATTER, HEAT AND SOUND. Five hours, 1st term. Lectures and recitations Monday, Wednesday, and Friday, at 9, and two 2-hour laboratory periods per week, Monday and Wednesday, from 3 to 5, or Tuesday and Thursday, from 8 to 10. Open to students of the College and the Pharmacy and Medical Schools. This course is descriptive and experimental, and is intended for those who desire a knowledge of the subject, but who do not expect to make technical application of it, and who may have

had no previous instruction in the branch. Assistant Professor Stimpson.

2.—LIGHT, ELECTRICITY AND MAGNETISM. Five hours, 2d term. A continuation of 1, with the same schedule. Assistant Professor Stimpson.

3.—ELEMENTARY PHYSICS. Two hours recitation and six hours laboratory per week throughout the second term. This course is intended primarily for students entering the School of Pharmacy, but may be taken by others who wish to make up an entrance condition. No University credit will be given for this course. Professor Hill.

PHYSIOLOGY.

Professor HYDE.

1.—PHYSIOLOGY. A brief course in physiology. Two and one-half hours credit. Lectures and recitations, with demonstrations, based upon the essential structures and functions of the human body, are supplemented twice a week by practical work in the laboratory. The treatment of emergency cases, observations on the action of drugs upon tissues, the relation of the different organs and bones to each other and the structure of the chief tissues are some of the subjects undertaken by each student. Senior, 1st term, (a), 8 to 10. Professor Hyde.

VII. THE SCHOOL OF MEDICINE.

FACULTY.

- FRANK STRONG, Ph. D., President.
MERVIN T. SUDLER, Ph. D., M. D., Dean of the Scientific Department, and Professor of Anatomy.
GEORGE H. HOXIE, A. M., M. D., Dean of the Clinical Department, and Professor of Internal Medicine.
WILLIAM ELLIS ABRAMS, M. D., Internal Medicine.
NOAH ADAMS, M. D., Rhinology and Laryngology.
EDGAR H. S. BAILEY, Ph. D., Professor of Chemistry and Metallurgy, and Director of Chemical Laboratories.
CLARENCE E. MCCLUNG, Ph. D., Professor of Zoölogy.
MARSHALL A. BARBER, A. M., Professor of Bacteriology and Pathology.
WILLIAM J. BAUMGARTNER, A. M., Assistant Professor of Zoölogy.
R. F. BARNEY, M. D., Surgery.
D. W. BASHAM, M. D., Lecturer on Surgery.
THOMAS J. BEATTIE, M. D., Gynecology.
JOHN F. BINNIE, M. D., Surgery.
EDWARD G. BLAIR, M. D., Surgery.
JACOB BLOCK, M. D., Genito-urinary Surgery.
CHARLES E. BOWERS, M. D., Lecturer on Surgery.
JULIUS BRUEHL, M. D., Internal Medicine.
FRANCIS W. BUSHONG, Sc. D., Assistant Professor of Chemistry.
HAMILTON P. CADY, Ph. D., Associate Professor of Chemistry.
R. E. CASTELAW, M. D., Internal Medicine.
H. L. CHAMBERS, M. D., General Medicine.
EDWARD L. CHAMBLISS, M. D., Internal Medicine.
FAY P. CLARK, M. D., Electrotherapeutics.
W. H. COFFEY, M. D., Proctology.
GEORGE O. COFFIN, M. D., Surgery.
ROBERT J. CURDY, M. D., Ophthalmology.
FRANCIS M. DAILEY, M. D., Lecturer on Surgery.
FORREST W. DAILEY, M. D., Rhinology and Laryngology.
OLIVER H. DEAN, Lecturer in Medical Jurisprudence.
HERBERT W. EMERSON, B. S., Assistant Professor of Pharmacy.

- SAMUEL C. EMLEY, M. D., Associate Professor of Bacteriology and Pathology.
- J. WESLEY FAUST, M. D., Nervous and Mental Diseases.
- HAL FOSTER, M. D., Rhinology and Laryngology.
- WILLIAM J. FRICK, M. D., Surgery.
- WILLIAM FRICK, M. D., Dermatology.
- BLENCOE E. FRYER, M. D., Ophthalmology.
- OLIVER J. FURST, M. D., Lecturer on Pediatrics.
- JAMES W. GAINES, M. D., Otology.
- VIRGINIUS W. GAYLE, M. D., Therapeutics.
- SAMUEL S. GLASSCOCK, M. D., Mental and Nervous Diseases.
- MAX GOLDMAN, M. D., Pediatrics.
- CLARENCE C. GODDARD, M. D., Psychiatry.
- GEORGE M. GRAY, M. D., Surgery.
- JEFFERSON D. GRIFFITH, M. D., Surgery.
- DON CARLOS GUFFEY, M. D., Obstetrics.
- C. LESTER HALL, M. D., Gynecology.
- D. WALTON HALL, M. D., Rhinology and Laryngology.
- FRANK J. HALL, M. D., Associate Professor of Pathology and Director of Clinical Laboratory.
- GEORGE F. HAMEL, M. D., Surgery.
- HENRY O. HANAWALT, M. D., Neurology.
- CHARLES B. HARDIN, M. D., Hygiene.
- NATHAN O. HARRELSON, M. D., Gynecology.
- JAMES L. HARRINGTON, M. D., Genito-urinary Surgery.
- L. D. HAVENHILL, B. S., Associate Professor of Pharmacy.
- ELLERY M. HETHERINGTON, M. D., Gynecology.
- R. W. HOLBROOK, M. D., Dermatology.
- CHARLES S. HUFFMAN, M. D., Lecturer on Obstetrics.
- P. D. HUGHES, M. D., Surgery.
- JOHN W. HUNT, M. D., Clinical Pathology.
- BENNETT C. HYDE, M. D., Surgery.
- IDA H. HYDE, Professor of Physiology.
- BENJAMIN JACOBS, M. D., Internal Medicine.
- M. F. JARRETT, M. D., Lecturer on Ophthalmology.
- C. W. JONES, M. D., Gynecology.
- GEORGE A. KING, M. D., Internal Medicine.
- NORMAN L. KNIPE, M. D., Gynecology and Obstetrics.
- WILLIAM F. KUHN, M. D.,* Neurology.
- JOHN W. KYGER, M. D., Pediatrics.
- SIMON B. LANGWORTHY, M. D., Lecturer on Gynecology.
- J. HALCOMBE LANING, M. D., Internal Medicine.
- CHARLES H. LESTER, M. D., Pediatrics.

* On leave of absence.

- JOSEPH S. LICHTENBERG, M. D., Ophthalmology.
C. J. LIDIKAY, M. D., Ophthalmology.
O. M. LONGENECKER, M. D., Internal Medicine.
HENRY H. LOOK, M. D., Ophthalmology.
RICHARD C. LOWMAN, M. D., Surgery.
ERNEST J. LUTZ, M. D., Internal Medicine.
JAMES W. MAY, M. D., Ophthalmology.
W. L. MCBRIDE, M. D., Dermatology.
DAVID F. MCFARLAND, M. S., Assistant Professor of Chemistry.
JOHN W. MILLER, M. D., Internal Medicine.
BENJAMIN F. MORGAN, M. D., Lecturer on Anesthesia.
CALVIN J. MORROW, M. D., Proctology.
FREDERICK D. MORSE, M. D., History of Medicine.
GEORGE C. MOSHER, M. D., Obstetrics.
FRANKLIN E. MURPHY, M. D., Internal Medicine.
JAMES NAISMITH, M. D., Professor of Physical Education.
ZACHARIAH NASON, M. D., Obstetrics.
HARRY O'DONNELL, M. D., Lecturer on Internal Medicine.
JOHN W. PERKINS, M. D., Surgery.
DAVID R. PORTER, M. D., Lecturer on Life Insurance.
MELANCTHON C. PORTER, M. D., Lecturer on Surgery.
RUSSELL A. ROBERTS, M. D., Proctology.
ERNEST F. ROBINSON, M. D., Surgery.
CARL SANDZEN, M. D., Physical Therapeutics.
J. E. SAWTELL, M. D., Rhinology and Laryngology.
LUCIUS E. SAYRE, B. S., Professor of Pharmacy.
EDWARD W. SCHAUFFLER, M. D., Internal Medicine.
ROBERT MCE. SCHAUFFLER, M. D., Surgery.
W. H. SCHUTZ, M. D., Ophthalmology.
JOHN N. SCOTT, M. D., Electrotherapeutics.
B. T. SHARP, M. D., Gynecology.
CHARLES J. SIMMONS, M. D., General Surgery.
ROBERT T. SLOAN, M. D., Internal Medicine.
EUGENE SMITH, M. D., Demonstrator in Anatomy.
J. HERBERT SMITH, M. D., Gynecology.
CHARLES L. SPAULDING, M. D., Orthopedic Surgery.
CHARLES M. STEMEN, M. D., General Medicine.
PRESTON STERRETT, M. D., Internal Medicine.
AMBROSE TALBOT, M. D., Internal Medicine.
LINCOLN G. TAYLOR, M. D., Neurology.
JOHN H. THOMPSON, M. D., Ophthalmology.
EDWARD H. THRAILKILL, M. D., Proctology.
JAMES E. TREXLER, M. D., Genito-urinary Surgery.

WILLIAM KIRK TRIMBLE, M. D., Clinical Pathology.
 JOHN TROUTMAN, M. D., Electrotherapeutics.
 LYMAN L. UHLS, M. D., Lecturer on Psychiatry.
 FREDERICK T. VAN EMAN, M. D., Gynecology.
 ERNEST VON QUAST, M. D., Orthopedic Surgery.
 LALIA V. WALLING, Laboratory Assistant in Physiology.
 FRANK H. WEISS, M. D., Pediatrics.
 HUGH WILKINSON, M. D., Surgery.
 I. J. WOLF, M. D., Internal Medicine.
 N. P. WOOD, M. D., Internal Medicine.
 C. L. ZUGG, M. D., Internal Medicine.

THE COUNCIL.

SAMUEL C. EMLEY, A. B., M. D., Bacteriology and Pathology.
 EDGAR H. S. BAILEY, Ph. D., Chemistry.
 CLARENCE E. MCCLUNG, Ph. D., Zoölogy.
 MARSHALL A. BARBER, A. M., Bacteriology and Pathology.
 L. D. HAVENHILL, B. S., Pharmacy.
 JOHN F. BINNIE, A. M., M. D., C. M., Surgery.
 BLENCOE E. FRYER, M. D., Special Subjects.
 C. LESTER HALL, M. D., Gynecology and Obstetrics.
 FRANK J. HALL, M. D., Clinical Pathology and Hygiene.
 EDWARD E. SCHAUFFLER, A. B., M. D., Internal Medicine.

HISTORY.

In the act of the legislature establishing the University there was contemplated the founding of a Medical School, but conditions were such that until recently it was not possible to carry out completely the plans which were then laid. Some steps were taken, as opportunity offered, to further the formation of a Medical School, and, in 1880, the "Preparatory Medical Course," under the administration of the College, was started. Until 1899 this was the only indication that the University was interested in the subject of medical education. In this year the School of Medicine was definitely organized, and the first two years of a modern course was offered to students. It was believed that the remaining two years could not profitably be attempted at Lawrence, and so the matter rested until it was thought feasible to put the clinical work upon a foundation sufficiently broad for the building of a Medical School that would compare favorably with the other schools of the University.

Such an establishment became possible through the generosity

of Dr. Simeon B. Bell, of Rosedale, Kan., who, in memory of his wife, Eleanor Taylor Bell, gave the University money and property sufficient to build and equip the necessary laboratories and hospitals.

ORGANIZATION.

The work of the School of Medicine is organized under two major departments—the Scientific Department and the Clinical Department—each covering two years, and each having its own separate Faculty and organization.

I. THE SCIENTIFIC DEPARTMENT.

The work of the first two years is given at Lawrence, under the direction of a dean of students. It consists of the fundamental scientific branches, anatomy, histology, embryology, physiology, pathology, chemistry, bacteriology, etc., which are given in the well-equipped University laboratories. Medical students have all the advantages of libraries, museum and lectures that are to be found in a large educational institution. Matriculation and registration for the first two years are to be had at Lawrence.

II. THE CLINICAL DEPARTMENT.

The third and fourth years are given in the laboratories and hospitals at Kansas City and Rosedale, under the charge of a dean of students. In the various hospitals and dispensaries the students have opportunities to work with about 100 ambulant patients daily, while the hospitals affiliated with the University contain some 600 beds. Students of the third and fourth years register with the Dean at Kansas City.

COUNCIL OF THE SCHOOL OF MEDICINE.

The Council of the School of Medicine has charge of matters affecting the School of Medicine as a whole, subject to the rules of the Board of Regents, and is made up of the Chancellor of the University, chairman, the Deans of the two major departments, and five professors, clinical professors or associate professors, from each major department.

I. THE SCIENTIFIC DEPARTMENT.

The scientific department of the School of Medicine, which consists of the fundamental and non-technical courses, was organized in 1899, and has offered work since that time.

EQUIPMENT.

For the work of the first two years of the medical course the entire scientific equipment of the University is available. The University already possessed, when the Medical School was established, laboratories for chemistry, pharmacy, bacteriology and histology of the most approved types. In physiology and anatomy laboratories were provided in the Medical Hall, and the other equipment materially increased. The greater part of the work of the first two years is of a purely scientific character, and most of the student's time is spent in the laboratories. This necessitates providing the very best laboratory facilities possible. And not only has this been done, but most of the instruction is given by men who devote themselves entirely in teaching these pure sciences and are not interested in any other occupation.

The chemistry is given in the Chemistry Building, which is a new, large, airy and commodious building, and not only provides apparatus and facilities for work in the regular courses, but provides every thing necessary for the student in graduate work if he wishes to take it. The laboratories for pharmacology and toxicology are in the same building and the equipment is no less generous for these subjects than for chemistry. During the present year it is intended to add an animal house so that physiology experiments on living material will be available for use in this department. Laboratories for bacteriology, histology, embryology and pathology are in Snow Hall, and in these subjects each student is provided with a microscope and all necessary apparatus for his exclusive use. The laboratories of physiology occupy the main floor of Medical Hall and are well equipped, having sufficient amount of apparatus so that each student is supplied with a set. In this department also apparatus and opportunity are offered for graduate work, should any student be sufficiently prepared. The laboratories for the gross anatomy and Dean's office are on the lower floor of Medical Hall, and all facilities are provided for careful, accurate dissection of the human body.

During the past year the number of books and periodicals relating to subjects of the first two years of the medical course has been very materially increased.

ADMISSION.

There are two methods of admission to the School of Medicine: First, by examination; second, by certificate.

BY EXAMINATION. Students who cannot present certificates from accredited schools will be examined in the subjects required for admission at the times and place of examination, indicated in the General Catalogue, under the College. Subjects upon which the candidate will be examined are given below.

BY CERTIFICATE. Nearly all students enter the School of Medicine on certificates from high schools, academies, or other preparatory schools. The method of accrediting by certificate is the same as that in the College.

Graduates of state normal schools, or of high schools or academies outside of the state of Kansas, whose credits are accepted by another state university, may be admitted under the same condition.

UNITS REQUIRED.

The time value of each study is stated in units, a unit meaning one high-school study pursued daily for at least thirty-five weeks. A total of fifteen units is required for entrance for the term beginning in September, 1907. A student may be conditioned in not more than three units. Conditions must be made good before entrance into the second year.

SUBJECTS FOR ADMISSION.

The subjects from which entrance work may be offered, together with the number of units, are arranged in six groups, as follows:

GROUP I, English.	{ English, four units.	{ Three units are required.
GROUP II, Mathematics.	{ Algebra, one and one-half units. Plane geometry, one unit. Solid geometry, one-half unit.	{ The elementary algebra and plane geometry are required.
GROUP III, Foreign Languages.	{ Latin, four units. Greek, three units. German, three units. French, three units.	{ Of these, three units are required, which must be, first, in Latin, or, second, in German.*
GROUP IV, Physical Sciences.	{ Physical geography, one unit. Physics, one unit. Chemistry, one unit.	{ One unit required, which must be laboratory work.

*The College does not encourage the substitution of German for Latin for entrance to the Freshman year.

GROUP V, Biological Sciences.	{	Botany, one unit. Zoölogy, one unit.	{	One unit required, which must be lab- oratory work.
		Greek and Roman, one unit. Mediæval and modern, one unit. English, one unit. American, one unit. Economics, one unit.		One unit required.
GROUP VI, History.	{		{	

As observed above, to secure unconditional admission to the Freshman class of the School of Medicine the candidate must offer fifteen units from the foregoing list of accredited preparatory subjects. Of these fifteen units, eleven and one-half are prescribed by group; the remaining three and one-half units may be chosen without restriction.

ADVANCE IN REQUIREMENTS FOR ADMISSION.

In the growth of medical education it has been found, here as elsewhere, that the increase in the complexity of the medical course demands an increase in the ability of the student to grasp facts as they are presented to him, even from the first. It also requires the more or less complete elimination of certain subjects from the regular medical course that have occupied a part of it in the past.

This advance in medical education has been almost entirely along the lines of more laboratory work and work of greater exactness, while from the standpoint of instruction it means fewer and fewer lectures and more and more individual instruction and individual effort on the part of the student.

It is realized more and more that, in order to give an effective medical education, the student must have a thorough grounding in the various subjects covered by the general terms of anatomy, physiology, and pathology. These subjects are taught almost entirely in laboratories and by laboratory methods, and, for the student who has never been trained to use his hands and powers of observation, this is so new to him that it is almost the end of the first year before he begins to comprehend what is offered to him.

The student who has had but a high-school education finds the great mass of medical literature in German and French closed to him, and when it is considered how very valuable this is, due to the fostering of laboratories and libraries that are used for research by the governments of those countries, it means a very great loss to him.

The public and the profession, as the country grows older and medical knowledge increases, are both demanding more knowledge and wider information on the part of the physician. The physician of the future must be a man who is able to do more than treat diseases. He must understand the underlying principles of his profession and be ready to serve the community in which he lives, and perhaps it will be his privilege to serve it more efficiently through that greatest and most actively growing field of applied biological science viz., preventative medicine.

In recognition of these demands, the officials of the University have decided to raise the requirements for entrance to the Medical School to one year in approved college work in September, 1908, and two years of approved college work in September, 1909.

With the requirements thus raised, it will be possible for every student to obtain the bachelor's degree upon the completion of the first two years of medical work, as is now arranged for in the combined college and medical course, requiring six years for completion. This preliminary college work should be so arranged as to give the broadest bearing on the studies which are to follow in the Medical School, *i. e.*, subjects which will enable the prospective student of medicine to work effectively.

These two years of college work should include the following studies, with more or less modification, to suit individual needs and the conditions at the institution in which the student is taking his preliminary course: Two years of work in chemistry, with laboratory work, covering inorganic and organic chemistry well; one year of work in physics, with laboratory work, if possible; at least one year of biology, with laboratory work. This should be zoölogy or comparative anatomy, if it is possible to devote but one year to it. All the English, French and German that the student can obtain. In fact it is felt that this side of his preparation is of but little less importance than the work in science.

The subjects recommended include the following courses in the University of Kansas,* and the prospective student of medicine should arrange his work, in whatever college he may be, to conform as nearly as possible to these courses:

FRESHMAN YEAR.

First Term: Chemistry 1, Physics 3 and 5, French 1 or German 1, English 1.

Second Term: Chemistry 2, Physics 4 and 6, French 2 or German 2, English 2.

SOPHOMORE YEAR.

First Term: [Organic Chemistry, Zoölogy 1, French 3 or German 3.

Second Term: Organic Chemistry, Zoology 2, French or German or English.

It is recommended that where it is possible the student should take a course in inorganic chemistry in the high school, so that upon entering the University he will be able to enter a more advanced course than he would otherwise be able to pursue. In order to obtain a reading knowledge of French, it is necessary for the average student to take about ten hours' work, which would include both terms of the first year. While not required, the student is advised to take French the first term of the second year also. In order to obtain a reading knowledge of German, about twenty hours of work is necessary, which necessitates the study of German throughout all four terms of the first two years. A single year spent on German is practically wasted. Three years of some language (preferably Latin) should be taken in the high school as a preparation for the study of German and French. In this advised course it is possible for the student to take about ten hours of optional work. This is left so that an opportunity may be given to choose that which will best supplement the high-school training and complete the preparation for the medical course.

ADVANCED STANDING.

Advanced standing is granted only upon examination in those subjects for which credit is desired. These examinations are conducted by the Dean of the Scientific Department for the first two years' work, and by the Dean of the Clinical Department for the work belonging to the third year. Candidates desiring such advanced standing must submit in detail a schedule of the work done by them and for which they wish credit; such schedules to be signed by the instructor in each subject or by a competent officer of the institution in which work was done.

EXPENSES—SCIENTIFIC DEPARTMENT.

By legislative enactment, a matriculation fee of five dollars (to be paid but once) must be charged each Kansas student entering the School of Medicine. All students are required to pay an incidental fee of twenty-five dollars. In the six-year course, during the first three years the fee will be the incidental fee of the College; in the remaining three years the regular fees of the Medical School will be charged. Non-residents of Kansas must pay a ma-

trication fee of ten dollars and an incidental fee of thirty-five dollars. If the student so elects, one-half of the incidental fee may be paid at the beginning of each term. Laboratory fees, to cover cost of material used, will be charged by the different departments. The amount of these fees will average about as follows: Anatomy, \$5 per part; physiology, \$10; histology, \$2.50; embryology, \$1; chemistry, \$5 to \$10; physiological chemistry, \$3; bacteriology, \$2.50; pathology, \$2; making the total amount about \$60 per year for residents of Kansas, and about \$80 for non-residents.

All laboratory fees must be paid within ten days of the beginning of the term's work.

REGISTRATION AND ENROLMENT.

The exacting nature of the work in the Medical School makes it necessary for students to enter promptly their classes. Enrolment must therefore be secured within the first week of each term. Students may enter later only for good reasons, but, in the discretion of the Dean of the department, they may have the amount of their work limited.

Application for enrolment by resident students must be made at least two weeks before the end of each preceding term.

EXAMINATIONS.

Examinations will be held for all students during the last days of each course. Final examinations occur on the last day of the term or half-term.

Failures must be made good at the earliest suitable moment. If not removed before the recurrence of the courses, the work will have to be taken again in class.

Failure in more than a third of the student's work severs his connection with the University. He may be reinstated only by the action of the Dean of the department.

DEGREES.

Two degrees are open to students in the School of Medicine:

The degree of doctor of medicine is granted to those satisfactorily completing the work of the full four-year medical course.

The degrees of bachelor of arts and doctor of medicine are conferred upon those completing the full six-year course in the College of Liberal Arts and Sciences and the School of Medicine, as laid down in the catalogue of the College.

REQUIREMENTS FOR GRADUATION.

The University of Kansas has adopted as a unit of study a lecture or recitation one hour in length, or laboratory or clinical period two hours in length, once a week for a term of eighteen weeks. The University requires, therefore, of candidates for the degree of doctor of medicine, credits for 140 hours of study in the School of Medicine. These hours must be distributed as follows:

Anatomy, histology, and embryology, 30 hours; physiology and physiological chemistry, 20 hours; bacteriology, 5 hours; pathology, 15 hours; materia medica and pharmacology, 5 hours; internal medicine, 15 hours; surgery, 12 hours; obstetrics, 3 hours and the conduct of six births; gynecology, 3 hours; skin and venereal diseases, 1 hour; nervous and mental diseases, 3 hours; ophthalmology, 1 hour; elective, 27 hours.

AMOUNT OF WORK.

It is not advisable to attempt to carry full work in the Medical School and to engage in outside occupations. If it is necessary for students to make a portion of their expenses while in school, a longer time will be required to complete the course. Should students for any reason be unable to carry full work, they may, at the discretion of the Dean of the department, be withdrawn from certain courses.

COURSES OF STUDY.

There are two courses of study open to the medical student entering before September, 1909—a four-year course, leading to the degree of doctor of medicine, and a six-year course, in which the student may earn the degree of bachelor of arts at the end of four years and the degree of doctor of medicine after two years more. It is earnestly recommended that the six years' work be taken, since without adequate and thorough preparation the physician starts into work seriously handicapped, and remains throughout his professional career removed from the position of usefulness and influence that he should occupy. By undertaking the six-year course the student may, during the first and second years of his connection with the University, secure training in the modern languages and in the physical and biological sciences that will be of inestimable value to him.

SIX-YEAR COURSE.

This consists of the Freshman and Sophomore work in the College, certain courses of Junior value in the College that are found also in the first year of the medical course, and finally the last three years of the medical curriculum. For entrance requirements and those relating to the prescribed work of the Freshman and Sophomore work, see pages 83, 114-117.

Those entering with acceptable botany, zoölogy or chemistry should take advanced courses in these subjects in the Freshman and Sophomore years. Physics must not be omitted. Those who enter with neither German nor French should pursue one or the other of those languages, preferably the former, during the whole, or the most, of the Freshman and Sophomore years; those who enter with preparation in either of these languages should seek to become as proficient as possible in both.

Registration will be secured in the College for the first three years and during the fourth year in the Medical School. Medical students must be enrolled in the Medical School during each of the last four years. At the end of the fourth year, on completion of all the requirements of the College, the College will grant the degree of bachelor of arts. Upon the completion of this work the student will enroll in the courses of the third and fourth years of the Medical School, and will receive the degree of doctor of medicine when satisfactory examinations are taken.

For Junior and Senior years, see Clinical Department.

FOUR-YEAR COURSE.

The work of the first and second years is of a general scientific character, and is given at Lawrence, where the facilities are of the best.

FIRST YEAR.

First Term:

Anatomy, daily, 8 to 12:15. Professor Sudler.

Chemistry, daily, 1:30 to 3:30. Doctor Bushong.

Histology, daily, 3:30 to 5:30. Assistant Professor Baumgartner.

Second Term:

Anatomy, daily, 8 to 12:15. Professor Sudler.

Physiological Chemistry, daily, 1:30 to 3:30. Mr. Emerson.

Organic Chemistry, Monday, Wednesday, and Friday, 3:30 to 5:30. Professor Duncan.

Embryology, Tuesday and Thursday, 3:30 to 5:30. Professor McClung.

SECOND YEAR.

First Term:

Anatomy, daily, (a), 8 to 12:15. Professor Sudler.
Physiology, daily, (b), 8 to 12:15. Professor Hyde.
Bacteriology, daily, 1:30 to 3:30. Professor Emley.
Dispensing, Tuesday and Thursday, 3:30 to 5:30. Mr. Havenhill.
Diagnosis, Monday, 3:30 to 5:30. Doctor Chambers.
History of Medicine, Friday, 3:30 to 5:30. Doctor Morse.
Surgery, Wednesday, 3:30 to 5:30. Doctor Simmons.

Second Term:

Physiology, daily, 8 to 11:15. Professor Hyde.
Materia Medica, daily, 11:15 to 12:15. Professor Sayre.
Toxicology, Friday, 11:15 to 12:15. Professor Bailey.
Pathology, daily, 1:30 to 3:30. Doctor Emley.
Diagnosis, Monday and Friday, 3:30 to 5:30. Doctor Chambers.
Surgery, Wednesday, 3:30 to 5:30. Doctor Simmons.
Physical Diagnosis, Tuesday and Thursday, 3:30 to 5:30. Doctor Naismith.

For the work of the third and fourth years, see Clinical Department.

UNIVERSITY PHYSICIAN.

The University Physician was appointed in order better to look after sick students away from home, giving them the same care and attention that they would have if they had their parents to care for them; to consult with students in all matters relating to health; to be easily available to all students with trivial ailments, and to prevent, when possible, such ailments from becoming serious; to provide necessary medical services gratuitously to those students who are making their way through the University and who would be compelled to leave if medical services were added to their expenses; to work with the University Health Committee in seeking out and eliminating special sources of infection, and in preventing the spread of infectious and contagious diseases among the students. This work is in charge of Dr. S. C. Emley, of the Department of Pathology.

COURSES OF INSTRUCTION.

ANATOMY.

Professor SUDLER.

Professor MCCLUNG.

Assistant Professor BAUMGARTNER.

Doctor SMITH.

Assistant Instructor SCAMMON.

EQUIPMENT.—The laboratories for gross anatomy and dissecting occupy the lower floor of Medical Hall. The dissecting rooms are well lighted and comfortable. During the last year the equipment has been completely overhauled and more material for the student has been provided, including dissections and osteological preparations. A special effort is made to embalm the dissecting material so as to give absolutely the best result, and material assigned to students is perfectly sterile; the softness and natural color of the tissues are well preserved. A fee is charged each student, covering the actual cost of material consumed. They are furnished a skeleton for study and are expected to provide dissecting instruments and two gowns for use in the dissecting room. Histology and embryology are given in well-equipped laboratories in Snow Hall. For the details of the equipment, see page 333.

1.—**DESCRIPTIVE ANATOMY.** Seven hours, 1st term, daily, 8 to 12:15. The first two weeks are occupied by a study of osteology. The vertebral column is considered from a morphological standpoint, and the various bones studied by means of drawings and modeling. The balance of the term is devoted to dissection of the arm and leg, and study of the various preparations and models illustrating these parts. Professor Sudler and Doctor Smith.

2.—**DESCRIPTIVE ANATOMY.** Eight hours, 2d term, daily, from 8 to 12:15. During this term the abdomen, thorax and head are carefully dissected and studied. This course is simply a continuation of course 1. Professor Sudler and Doctor Smith.

3.—**THE CENTRAL NERVOUS SYSTEM.** Four hours, 1st term, daily, 8 to 12:15. This is a study of the gross anatomy of the cord and brain by means of dissections and models. A number of new preparations have been provided, including both dissections and microscopical sections. The latter are stained by the Weigert method, and are demonstrated by the microscope and lantern. The various nuclei of the cranial nerves and the most important tracts of the cord and brain are considered. Professor Sudler.

4.—**OPTIONAL WORK FOR ADVANCED STUDENTS.** This work is

done individually, and is arranged to suit the needs and the ability of the student. In a large measure, it will consist of a study of cross-sections, special dissections, and preparation of anatomical material. Professor Sudler.

5.—HISTOLOGY, OR MICROSCOPICAL ANATOMY. Five hours, 1st term, daily, 3:30 to 5:30. Microscopical manipulation, the study of normal tissues and the methods of preparing mounted objects are presented in this course. Lectures and laboratory work. Required of first-year medical students. Assistant Professor Baumgartner and Mr. Scammon.

6.—EMBRYOLOGY. Two hours, 2d term, Tuesday and Thursday, 3:30 to 5:30. The general principles of ontogenetic development, with special application to man. Lectures, text-book work, and laboratory exercises. Required of first-year medical students. Professor McClung and Mr. Scammon.

BACTERIOLOGY AND PATHOLOGY.

Associate Professor BARBER.

Associate Professor EMLEY.

Doctor CHAMBERS.

1.—BACTERIOLOGY. Five hours, 1st term, daily, 1:30 to 3:30. Bacteriological technique and the study of pathogenic bacteria from a medical and diagnostic point of view. A laboratory and didactic course. Required of second-year students. Associate Professor Emley.

2.—INTRODUCTION TO PATHOLOGY. Three hours, 1st term, Monday, at 3:30; 2d term, Monday and Friday, at 3:30. A course of lectures and recitations covering the principles of pathology, with especial reference to etiology and diagnosis. Required of second-year students. Doctor Chambers.

3.—GENERAL PATHOLOGY. Five hours. Two hours each day during the second term, 1:30 to 3:30. A laboratory and didactic course. Required of second-year students. Associate Professor Emley.

4.—ADVANCED BACTERIOLOGY AND PATHOLOGY. Five hours. Open to medical students who have had sufficient preparation. Professor Barber and Associate Professor Emley.

See, also, Pathology (clinical).

CHEMISTRY.

Professor BAILEY.

Professor DUNCAN.

Assistant Professor MCFARLAND.

Assistant Professor CURTIS.

Assistant Professor BUSHONG.

1.—GENERAL CHEMISTRY. 1st term, daily, 1:30 to 3:30. Laboratory work three afternoons each week, and lectures two afternoons, from 1 to 3. In this course special attention is given to the development of the laws that underlie the theories of chemistry, and those theories are illustrated by a study of the simple elements. This is followed by a study of the bodies formed by the combination of the elements. The course with the non-metallic elements is followed by a careful study of the metals, including their source, methods of preparation, properties, uses, and the uses of the compounds in the arts and in medicine. The study of methods for writing reactions and of chemical problems is carried on in connection with the daily lectures and recitations. In the laboratory work, the student first learns the simpler problems of chemical manipulation, then the practical methods of preparing the ordinary gaseous elements and their compounds, and afterwards of the acids, ammonia, etc. Frequent recitations are held, in order to show the proficiency of the student, and a final examination determines his knowledge of the whole subject. Text-book, Long's Elements of General Chemistry. Assistant Professor Curtis and assistants.

2.—ORGANIC CHEMISTRY. Lectures and recitations, five hours. The course in organic chemistry is a continuation of the course in general chemistry. The lectures will treat of the occurrence, methods of preparing and the properties of the various classes of organic compounds; as, the hydrocarbons, alcohols, ethers, aldehydes, sugars, starches, etc. 1st term, Monday, Wednesday, and Friday, 4:30 to 5:30. Laboratory, Saturday, 8 to 12. This course may be followed by an advanced course in organic chemistry, including organic preparations. Professor Duncan and assistants.

3.—QUALITATIVE ANALYSIS. This course covers the general methods for the detection and separation of the metals and acids. This is largely carried on by laboratory work, with occasional lectures on the theory. Five exercises per week, throughout the second term. This course is not accepted for College or engineering credit. 2d term, daily, 1:30 to 3:30. Assistant Professor McFarland.

4.—TOXICOLOGY. A discussion of the sources, properties, methods of detection, *post-mortem* appearances, fatal dose and methods of treatment in case of the inorganic and organic poisons. Lec-

tures, with examinations. One exercise per week, Friday, at 11:30. Professor Bailey.

5.—PHYSIOLOGICAL AND MEDICAL CHEMISTRY. Five hours, 1st term, 1:30 to 3:30. This course is offered to meet the requirements of medical students. Products of physiological interest are separated from animal tissues and organs and studied in detail. Special attention is given to the study of carbohydrates, proteins, and the normal and abnormal products of animal life. The second part of the course consists of five weeks of urinalysis, embracing lectures, recitations, and work in both chemical and microscopical laboratories. Required of first-year students. Text: Hammerstine's Physiological Chemistry. Professor Sayre and Assistant Professor Emerson.

6.—ADVANCED WORK IN PHYSIOLOGICAL CHEMISTRY. The advanced study of any special branch of chemical physiology tending toward original work. Open to students having had general, qualitative, quantitative, organic and physiological chemistry. Either or both terms, by appointment. Professor Sayre and Assistant Professor Emerson.

HISTORY OF MEDICINE.

Doctor MORSE.

1.—SIXTEEN LECTURES ON THE HISTORY OF MEDICINE. Friday, at 3:30, during the first term. Required of second-year medical students. Doctor Morse.

PHARMACOLOGY AND THERAPEUTICS.

Professor SAYRE.

Associate Professor HAVENHILL.

Assistant Professor EMERSON.

The courses offered in the department are especially adapted to the study of drugs and remedial agents; especially designed to meet the requirements of the medical student. They teach him to recognize, handle, and know the properties of all the more important crude drugs and medicinal agents.

1.—PHARMACOLOGY AND MATERIA MEDICA. Five hours, 2d term, Monday, Tuesday, Wednesday, and Thursday, at 11:15. Classification, chemical and physiological properties of drugs, therapeutical application, methods of prescribing and dispensing, the action of organic and inorganic medicinal chemicals and their physiological relationships. Lectures and recitations. Required of second-year students. Professor Sayre.

2.—PHARMACY, DISPENSING, AND PHARMACOGNOSY. Two hours,

1st term, Tuesday and Thursday, 3:30 to 5:30. A special course designed to meet the needs of medical students, comprising weights, measures and processes used in the preparation of medicine; the geographical distribution, physical properties and identification of crude drugs. Lectures, recitations, and laboratory work. Required of second-year students. Associate Professor Havenhill.

3.—TOXICOLOGY. A discussion of the source, properties, methods of detection, *post-mortem* appearances, fatal dose and methods of treatment in case of the inorganic and organic poisons. Lectures, with examinations. One exercise per week, throughout the second term. Professor Bailey.

PHYSICAL DIAGNOSIS.

Dr. NAISMITH.

Physical diagnosis. Two hours, 2d term, Tuesdays and Thursdays, 3:30 to 5:30. A course of lectures, recitations, and practice designed to give the student a knowledge of the normal chest and abdomen, and the technique of obtaining the various physical signs.

PHYSIOLOGY.

Professor HYDE.

Doctor CHILDS.

Miss WALLING.

The physiological department is thoroughly equipped with approved modern apparatus for demonstration and experimental work.

Besides a large lecture-room that seats 100 students, it possesses a department library for the use of the students. The library contains the latest reference books and all of the best physiological journals.

The medical laboratory is equipped with specially planned tables, that have gas, water and electrical connections. Each table is supplied with a complete outfit of the best modern apparatus, sufficient for the investigation of hundreds of experiments, and two students are assigned to each table. It also has a large laboratory for the pharmacy and liberal arts students, that contains tables particularly designed for their work. In this laboratory are, besides the needed instruments, digesters, spirometers, kymegraphs, manometers, and all kinds of electrical apparatus, a skeleton, and a finest French manikin.

The research-room is fitted up with necessary tables, instruments and electrical apparatus for any kind of physiological experiments. There is also a large preparation-room, where most of the material is prepared, and a storeroom.

5.—PHYSIOLOGY. Ten hours. Daily, throughout the year, 8 to 12:15, 1st term; 8 to 11:15, 2d term. Recitations and lectures, with demonstrations, conferences, and journal club, and laboratory experimental work. Required of second-year medical students. Professor Hyde, Doctor Childs, and Miss Walling.

6.—PHYSIOLOGY. Five hours. Graduate course. Experimental physiology and original research. Open to students who have taken not less than a year of anatomy and physiology and have given evidence that they are prepared for it. Professor Hyde, Doctor Childs, and Miss Walling.

SURGERY.

1.—SURGICAL PRINCIPLES. A course of lectures, recitations and quizzes. One hour and a half each week during both terms, discussing the principles of asepsis in surgery, repair of divided tissues, conditions of regeneration, surgical fevers, etc. Text-book, Nancrede's Principles of Surgery. Doctor Simmons.

II. THE CLINICAL DEPARTMENT.

The Clinical Department was organized in the fall of 1905 by the merger of the Kansas City Medical College, founded in 1869; the Medico-Chirurgical College, founded in 1896; and the College of Physicians and Surgeons, founded in 1893. It was made possible by the acceptance on the part of the Regents of the University of certain tracts of land in and about Rosedale, Kan., donated by Dr. Simeon B. Bell, of that city. The department was opened in the fall of that year, with its laboratory and lecture-rooms, in the building of the College of Physicians and Surgeons, Kansas City, Kan., and its dispensary in the building of the Medico-Chirurgical College, 918 Independence avenue, Kansas City, Mo. The erection of new buildings in Rosedale was immediately begun, and in the winter of 1906-'07 the new laboratory building and the pavilion for internal medicine, at Rosedale, were occupied—the laboratory and lecture equipments being removed at that time to Rosedale.

The Clinical Department is divided into five subdepartments for administrative purposes. These are medicine, surgery, pathology and hygiene, gynecology and obstetrics, and the specialties. Each of these departments sends a representative to the Council of the School of Medicine.

EQUIPMENT.

The laboratory of clinical pathology occupies two complete floors of a building, 50 x 100 feet, together with the lecture-rooms and library on an extra floor. The teaching laboratory is equipped with a supply of microscopes and other accessories for instructional purposes; and, since it has been built especially for the purpose, is well adapted to its needs. The department has also a Thompson's projectoscope for showing both microscopic slides and photographs upon the screen.

The dispensary at 918 Independence avenue is a three-story, high-basement structure, with a large waiting-room and a smaller treatment-room for each of the departments represented in medicine. It handles about 2000 patients each year. Its situation brings to it the most varied collection of pathological conditions to be found in this vicinity.

The Eleanor Taylor Bell Memorial Hospital, operated by the University itself, is represented by the pavilion for internal medicine. In this pavilion are treatment-rooms for demonstrating the use of massage, hydrotherapy and balneotherapy, etc.; so that students are brought into personal contact with the most modern lines of treatment.

St. Joseph's Hospital contains some 200 beds and an amphitheater, in which the surgical treatment of a large number of pathological conditions is demonstrated. Three forenoons each week are devoted to clinics there.

St. Margaret's Hospital contains about 300 beds, and is visited by a class of students each forenoon. This work is the ward instruction as contrasted with the amphitheater instruction, and is proving to be very valuable.

ADMISSION.

Students are admitted to the Clinical Department upon a certificate from the Scientific Department, or upon examination in the subjects already pursued by the class to which the student seeks admission. The part of this catalogue devoted to the Scientific Department of the School of Medicine should be consulted for requirements for entrance to the first year of medicine and for the work of the first two years, upon which the work of the Clinical Department is based.

EXPENSES—CLINICAL DEPARTMENT.

The tuition is \$100 a year, which covers all expenses except those for materials broken, wasted, or consumed by the student. A stock-room is provided where students may purchase any needed

material, or, they may purchase the same, if they prefer, in the open market. Fifty dollars of the tuition is payable in September; and fifty dollars in February.

For those students who have not been enrolled in the University of Kansas, a matriculation fee of five dollars for Kansans, and ten dollars for non-Kansans is required, payable but once.

GRADUATE INSTRUCTION.

The University has established short courses of instruction for graduates of reputable medical colleges. These postgraduate courses are in terms of five weeks each. Graduates also may enter the undergraduate courses when these are not full. Special courses will be organized from time to time as the demand arises. The attention of graduates desiring postgraduate instruction is particularly directed to the section classes in the hospitals and dispensaries, where advanced students study patients and their treatment at closer range than can be had in the ordinary amphitheater clinic.

REQUIREMENTS FOR GRADUATION.

The Clinical Department requires definitely the satisfactory completion of 2646 actual hours. Each student, to be in regular course for graduation, must take at least eighteen units of work each term. In terms of such units the course in the Clinical Department specifies 105, which must be satisfactorily completed before any student will be recommended for a degree. (A "unit" is one hour of recitation or lecture, or one two-hour laboratory or clinic period, pursued for eighteen weeks.)

REQUIRED STUDIES.

(Arranged in accordance with the schedule of the American Medical Association.)

JUNIOR CLASS (OR THIRD YEAR—FIRST TERM).

	Di- dactic.	Labo- ratory.	Clinics.	Dispen- sary.	Total.
<i>Surgery</i>	54	....	36	18	108
<i>Medicine:</i>					
Physical diagnosis.....	....	....	27	72	99
Pathology and therapy...	90	....	....	....	90
<i>Obstetrics:</i>					
Physiological pregnancy and labor.....	54	....	....	....	54
<i>Gynecology:</i>					
Diseases of women.....	54	....	....	....	54
<i>Pathology:</i>					
Post-mortem technique...	....	10	....	....	10
Microscopic studies.....	36	54	....	....	90
Microsc'pic demonstrat'ns	....	18	....	....	18
<i>Therapeutics</i>	36	....	....	....	36
Total hours	378	82	63	90	613

JUNIOR CLASS (OR THIRD YEAR—SECOND TERM).

	Di- dactic.	Labo- ratory.	Clinics.	Dispen- sary.	Total.
<i>Surgery:</i>					
Orthopedic.....	18	....	18	....	36
Cranial.....	18	....	....	....	18
Genito-urinary.....	18	....	....	....	18
Clinical.....	....	....	36	18	54
<i>Gynecology: Clinical</i>.....	....	....	54	....	54
<i>Obstetrics:</i>					
Pathological.....	36	....	....	....	36
Practical.....	....	....	....	2 births	....
<i>Ophthalmology: Lectures</i> ..	36	....	....	....	36
<i>Medicine:</i>					
Pathology and therapy...	54	....	27	....	81
Children's diseases.....	18	....	....	....	18
Diagnosis.....	....	....	....	72	72
Nervous diseases.....	36	....	....	....	36
<i>Therapeutics:</i>					
Clinical therapeutics.....	36	....	....	....	36
<i>Rhinology and Laryngology:</i>					
General.....	18	....	....	18	36
<i>Dermatology: General</i>	18	....	....	18	36
<i>Pathology: Post-mortem pa- thology</i>	36	72	....	....	108
Total hours	342	72	135	126	675

SENIOR CLASS (OR FOURTH YEAR—FIRST TERM).

	Di- dactic.	Labo- ratory.	Clinics.	Dispen- sary.	Total.
<i>Pathology:</i>					
Clinical microscopy	36	36	....	....	72
Hygiene	36	....	....	....	36
<i>Medicine:</i>					
Dietetics	36	....	....	....	36
Ward classes .....	....	....	18	....	18
Mental diseases	36	....	....	....	36
Dispensary .....	....	....	....	72	72
Nervous diseases .....	....	....	36	....	36
Pediatrics .....	....	....	36	....	36
<i>Obstetrics:</i>					
Practical .....	....	....	....	2 births.	
Manikin .....	....	18	....	....	18
<i>Surgery:</i>					
Rectal	18	....	....	....	18
Ward classes .....	....	....	18	....	18
Diagnosis	36	....	....	....	36
Clinical .....	....	....	54	....	54
Operative technique	18	....	18	....	36
<i>Otology</i>	18	....	....	....	18
<i>Gynecology:</i> Clinical .....	....	....	54	36	90
<i>Rhinology and Laryngology,</i>	....	....	36	....	36
<i>Dermatology</i> .....	....	....	36	....	36
<i>Medical Economics</i>	18	....	....	....	18
<i>Ophthalmology and Otology,</i>	....	....	36	....	36
Total hours	252	54	342	108	756

SENIOR CLASS (OR FOURTH YEAR—SECOND TERM).

	Di- dactic.	Labo- ratory.	Clinics.	Dispen- sary.	Total.
<i>Surgery:</i>					
Amphitheater clinics .....	....	....	108	....	108
Ward classes .....	....	....	18	....	18
Rectal .....	....	....	36	....	36
Genito-urinary .....	....	....	....	36	36
Operative technique .....	....	36	....	....	36
<i>Medicine:</i>					
Ward classes .....	....	....	18	....	18
Dispensary .....	....	....	....	72	72
Nervous diseases .....	....	....	36	....	36
Pediatrics .....	....	....	36	....	36
<i>Ophthalmology and Otology,</i>	....	....	36	....	36
<i>Gynecology</i> .....	....	....	36	....	36
<i>Obstetrics:</i>					
Practical .....	....	....	....	2 births.	
Manikin .....	....	18	....	....	18
<i>Massage and Hydrotherapy:</i>	18	....	18	....	36
<i>Medical Jurisprudence</i>	18	....	....	....	18
<i>Electrotherapy</i>	18	....	36	....	54
Total hours	54	54	378	108	594

DAILY SCHEDULE FOR JUNIORS—FIRST TERM.

Hour.	MONDAY.	TUESDAY.	WEDNESDAY.	THURSDAY.	FRIDAY.	SATURDAY.
9 to 10	Surgery.	Surgery.	Surgery.	Surgery.	Surgery.	8:30 to 12, City Hospital Clinic.
10 to 11	Medicine.	Medicine.	Medicine.	Medicine.	Medicine.	
11 to 12	Gynecology.	Therapeutics.	Gynecology.	Therapeutics.	Gynecology.	
1:30 to 3	Medical Clinic § A.	Pathological Laboratory, 1 to 4.	Pathological Laboratory, 1 to 4.	Medical Clinic § A. Surgical Clinic § B.	Pathological Laboratory, 1 to 4.	Medical Clinic § B.
3 to 4	Surgical Clinic § A.			Medical Clinic § B.		
4 to 5	.....	Obstetrics.	Obstetrics.	.....	Obstetrics.	.....

DAILY SCHEDULE FOR JUNIORS—SECOND TERM.

Hour.	MONDAY.	TUESDAY.	WEDNESDAY.	THURSDAY.	FRIDAY.	SATURDAY.
9 to 10	Obstetrics.	Gynecological Clinic.	Surgery.	Surgical Clinic. (Elective.)	Surgery.	City Hospital Clinic, 8:30 to 12.
10 to 11	Neurology.		Pediatrics.		Neurology.	
11 to 12	Therapeutics.		Obstetrics.		Therapeutics.	
1:30 to 3	Medical Clinic § A. Rhinaryngology § B.	Pathological Laboratory, 1 to 5.	Medical Clinic § B.	Medical Clinic § B. Rhinaryngology § A.	Pathological Laboratory, 1 to 5.	Dermatology § A. Surgical Clinic § B.
3 to 5	Surgical Clinic § A. Dermatology § B.			Medical Clinic § A.		Orthopedic Demonstrations.
5 to 6	.....	Ophthalmology.	.....	.....	Ophthalmology.	Orthopedic Lectures.

DAILY SCHEDULE FOR SENIORS — FIRST TERM.

Hour.	MONDAY.	TUESDAY.	WEDNESDAY.	THURSDAY.	FRIDAY.	SATURDAY.
8	(Lectures.) Surgery.	Pathological Laboratory.	Surgical Clinic.	Surgical and Gynecological Clinic.	(Lectures.) Surgery.	Pathological Laboratory.
9	Hygiene.				Hygiene.	
10	Dietetics.				Dietetics.	
11	Psychiatry.				Psychiatry.	
1:30	Gynecological Clinic § A. Rhinolaryngology Clinic § B.	Medical Clinic § A.	Medical Clinic § A. Medical Clinic § B.	Rhinolaryngology Clinic § A. Ophthalmology Clinic § B.	Pediatric Clinic § B. Ophthalmology Clinic § A.	Gynecological Clinic § B. Dermatology § A.
3	Op. Surgery § A. Dermatology Clinic § B.	Medical Clinic § B.	Surgery. (Lecture.)	Pediatric Clinic § A. Op. Surgery § B.	Economics. (Lecture.)	Obstetrics.
4					Otology (Lecture.)	

DAILY SCHEDULE FOR SENIORS -- SECOND TERM.

Hour.	MONDAY.	TUESDAY.	WEDNESDAY.	THURSDAY.	FRIDAY.	SATURDAY.
8 to 10	Ward Classes.	Ward Classes.	Surgical Clinic, 9 to 12.	Surgical Clinic, 9 to 12.	Ward Classes.	Ward Classes.
10 to 12	Pathological Laboratory.	Pathological Laboratory.			Pathological Laboratory.	Operative Surgery.
Dispensary Sections.						
1:30 to 3						
3 to 4	Neurology.	Jurisprudence.	Electrotherapy.	Massage.	Hydrotherapy.	Obstetrics.

DISPENSARY AND WARD SECTIONS.

	1	2	3	4	5	6	7	8	
Sept. 10 { 28 {	Med.	Surg.	Eye.	Skin.	Gynec.	Ped.	G. U.	Rhinol.	{ Feb. 5. 17.
Sept. 30 { Oct. 2 {	Rhinol.	Med.	Surg.	Eye.	Skin.	Gynec.	Ped.	G. U.	{ Feb. 19. Mar. 3.
Oct. 14 { 26 {	G. U.	Rhinol.	Med.	Surg.	Eye.	Skin.	Gynec.	Ped.	{ Mar. 5. 17.
Oct. 28 { Nov. 9 {	Ped.	G. U.	Rhinol.	Med.	Surg.	Eye.	Skin.	Gynec.	{ Mar. 19. 31.
Nov. 11 { 23 {	Gynec.	Ped.	G. U.	Rhinol.	Med.	Surg.	Eye.	Skin.	{ Apr. 2. 14.
Nov. 25 { Dec. 7 {	Skin.	Gynec.	Ped.	G. U.	Rhinol.	Med.	Surg.	Eye.	{ Apr. 16. 28.
Dec. 9 { 21 {	Eye.	Skin.	Gynec.	Ped.	G. U.	Rhinol.	Med.	Surg.	{ Apr. 30. May 12.
Jan. 7 { 18 {	Surg.	Eye.	Skin.	Gynec.	Ped.	G. U.	Rhinol.	Med.	{ May 15. 26.

COURSES OF STUDY.

DERMATOLOGY.

(Skin and Venereal Diseases.)

This subject cannot be successfully taught apart from the demonstration of the actual lesions. Therefore the didactic and the clinical instruction are given together in the dispensaries. The first course is given during the third year, in order that the student may have all the succeeding terms in which to digest and assimilate the information thus given in rather intensive form. The subject of syphilis is included in the instruction afforded by the department. The following are the required courses:

- 1.—BEGINNER'S COURSE. For groups of ten students. Required of Juniors.
- 2.—ADVANCED COURSE. One hour, 1st term. Required of Seniors.

GYNECOLOGY.

Three hours of didactic instruction, two hours of amphitheater clinics and two hours of dispensary clinics are required in this department. The student is introduced to the subject by three hours of lectures in the first term of the Junior year; this is followed by amphitheater clinics in the second term, and by dispensary clinics and practice work in the wards and out-patient department in the Senior year. The effort is made to ally this subject with obstetrics rather than with surgery, and to put the emphasis of the teaching on diagnosis and conservative treatment, rather than on operative. The following courses are offered:

- 1.—DISEASES OF THE FEMALE GENITAL TRACT. Lectures. Three hours, 1st term. Required of third-year students. Monday, Wednesday, and Friday, at 11.
- 2.—CLINICAL GYNECOLOGY. Amphitheater clinics and clinical lectures. One hour, both terms. Required in the first term of fourth-year students; in the second term of third-year students. Tuesday forenoons, at St. Joseph's Hospital.
- 3.—GYNECOLOGICAL DIAGNOSIS. Practical exercises for groups of ten students. One hour, both terms. Required of fourth-year students.

HYGIENE.

In this most important subject, at present didactic instruction only is given, of which two hours are required. As this era is one of preventive medicine, hygiene is a subject most important to the general practitioner.

1.—A STUDY OF THE PRINCIPLES OF PREVENTIVE MEDICINE. Two hours, 1st term, Monday and Friday, at 9. Required of fourth-year students.

2.—IMMUNITY AND THE SERA. Lectures. One hour, 1st term, Saturday, at 10. Elective.

INTERNAL MEDICINE.

This department is regarded as the basic department in the medical curriculum. On the one hand, it is closely allied with the laboratory; on the other, with the departments of special technique. The work begun in the Scientific Department with the courses on diagnosis and pathology is followed in the third year by series of didactic exercises on pathology and therapy, and by practical exercises in physical diagnosis.

The final step in the course is given in the ward classes at the St. Margaret's and the Eleanor Taylor Bell Memorial hospitals. This gives the intensive study of disease types, while the dispensaries afford an extensive study of many forms and varieties of disease.

2.—DISEASES OF METABOLISM. Lectures. One hour, 1st term, Monday, at 10. Required of third-year students.

3.—DISEASES OF THE GASTRO-INTESTINAL TRACT. Lectures. One hour, 1st term, Tuesday, at 10. Required of third-year students.

4.—DISEASES OF THE CHEST. Lectures. Two hours, 1st term, Wednesday and Friday, at 10. Required of third-year students.

5.—INFECTIVE DISEASES. Lectures. One hour, 1st term, Thursday, at 10. Required of third-year students.

6.—RENAL AND "CONSTITUTIONAL" AFFECTIONS. 2d term, Wednesday, at 10. Required of third-year students.

7.—CLINICAL INSTRUCTION in groups, with special reference to diagnosis. Two periods weekly. Two hours credit. 1st term. Required of third-year students. The divisions are uniform with those in other departments, and do not exceed ten students in each group.

8.—SAME. Two hours, 2d term. Required of third-year students.

9.—CITY HOSPITAL CLINIC. Saturday, at 8:30. One hour, both terms. Required of third-year students.

10.—CLINICAL INSTRUCTION for sections of ten. 1st term. For fourth-year students. This course is more general than those for Juniors, in that it pays greater attention to therapy and pathology.

11.—SAME. For fourth-year students, 2d term. During this term, the technique of life-insurance examination is taught.

12.—WARD CLASSES. Attendance restricted to fourth-year students and to four students in a group, at St. Margaret's, Bethany, and the Bell hospitals. Credit, one hour for each day.

13.—DIAGNOSIS OF DISEASES OF THE ABDOMEN. Lectures. One hour, fourth year, 2d term, Monday, at 11. Elective.

14.—DIETETICS. Lectures. One hour, fourth year, 2d term, Monday, at 4. Elective.

15.—SAME. Lectures. Two hours, 1st term, Monday and Friday, at 10. Required of fourth-year students.

MEDICAL JURISPRUDENCE.

This department of the clinical school contemplates the instruction of the fourth-year students not only in the rights and privileges of the physician, but also in matters relating to expert testimony, malpractice, ethics, and medical organization. Toxicology is taught at Lawrence. *Post-mortem* examinations, their technique and legal status are considered by the department of clinical pathology. Life insurance, however, is a matter taught by this department.

1.—MEDICAL JURISPRUDENCE. Lectures. One hour, 2d term, Tuesday, at 3. Required of fourth-year students.

2.—MEDICAL ECONOMICS. Lectures. Credit, one-half hour. 1st term, Friday, at 3. Required of fourth-year students.

NEUROLOGY AND PSYCHIATRY.

The regular work of this department begins in the second term of the third year, with two required lectures on nervous diseases. This is followed by lectures in the fourth year on psychiatry.

1.—PSYCHIATRY. Lectures. Two hours, 1st term. Required of Seniors. Monday and Friday, at 11.

2.—PSYCHIATRY. Lectures. One hour, 2d term. Saturday, at 9. Elective. Only those who have had some instruction in psychiatry are admitted to this course.

3.—ORGANIC DISEASES OF THE NERVOUS SYSTEM. Lectures. Two hours, 2d term, Monday and Friday, at 10. Required of third-year students.

4.—THE NEUROSES. Lectures. One hour, 2d term, Monday, at 3. Required of fourth-year students.

5.—NEUROLOGICAL CLINICS. One hour, 2d term. Required of fourth-year students. In sections of ten students.

OBSTETRICS.

This department is equipped with models and manikins sufficient to illustrate fully its instruction. Seven units of work are required, distributed over lectures and demonstrations; and the conduct of six births. For this latter work the student goes with his instructor to the home of the patient and carries out the delivery under the same conditions as obtain in actual practice. The following courses of study are offered:

1.—PHYSIOLOGICAL OBSTETRICS. This course embraces the physiology and management of pregnancy, labor, the puerperium, and the new-born. Three hours, 1st term, Tuesday, Wednesday, and Friday, at 4. Required of third-year students.

2.—PATHOLOGICAL OBSTETRICS. This course embraces the pathology of pregnancy, labor, the puerperium, and of the new-born, also treatment of these abnormal conditions. Two hours, 2d term, Monday at 9, Wednesday at 11. Required of third-year students.

3.—MANIKIN DEMONSTRATIONS. This includes demonstrations by the instructor with the manikin and foetus, and actual work on the same by the students under his guidance. Among the subjects taken up are the following: Presentation and position; mechanism of labor; technique of delivery; breech presentation; version and retraction; forceps and perineal repair. One hour, both terms, Saturday, at 3. Required of fourth-year students.

4.—CLINICAL OBSTETRICS. This course brings the student face to face with actual conditions met with from time to time in dispensary and hospital work. With the patient before him, the student is questioned regarding diagnosis, management and treatment, and where feasible, he does the actual work. One hour, fourth year. Elective, by appointment.

5.—OUT-PATIENT DEPARTMENT. The management of six births, together with a detailed report of each, is required of every student before graduation.

OPHTHALMOLOGY AND OTOTOLOGY.

Instruction in these subjects begins with a course of lectures on diseases of the eye in the second term of the Junior year. A course of lectures on diseases of the ear is given the fourth-year

students. The relation between ocular conditions and constitutional diseases is developed in a course of three lectures to the fourth-year students; so, also, is the relation between middle ear disease and cerebral conditions.

The clinical teaching is given under conditions affording each student actual contact with and a study of the various pathological conditions. The use of the ophthalmoscope is taught. So also are refraction and the fitting of glasses.

Very favorable opportunity for postgraduate study is offered in this department. Such students are taken into the private offices of the instructors and given every facility for practice in diagnosis and treatment of ocular and aural lesions.

1.—THE ELEMENTS OF OPHTHALMOLOGY. Lectures. Two hours, 2d term, Tuesday and Friday, at 5. Required of third-year students.

2.—CLINICAL OPHTHALMOLOGY AND OTOTOLOGY. For groups of ten students. One hour, 1st term. Required of fourth-year students.

3.—SAME. Second term. Required of fourth-year students.

4.—DISEASES AND INJURIES OF THE EAR. Lectures. One hour, 1st term, Friday, at 4. Required of fourth-year students.

PATHOLOGY (CLINICAL).

This department continues at Kansas City the work begun by the department of bacteriology and pathology at Lawrence, and is regarded as the basic study of the clinical department. Therefore, the work is required during the whole Junior year and in the Senior year until clinical and microscopical diagnosis is completed.

The work is almost exclusively in the laboratory and dead-room. This has made it necessary for the University to deal very generously with the department. It is provided with large laboratory space, morgue, animal-room, library, and other research-rooms. Each student is furnished with an oil-immersion lens, desk, and locker. He purchases his own glassware and stains.

Great stress is laid upon the ability to describe orally, in writing and by drawings the lesions and conditions found in the necropsies. Each student is expected to take part in conducting and recording four *post-mortem* examinations. He is expected to fix, stain and mount his own specimens. His note-books and protocols are used as a basis upon which to estimate the student's ability and industry.

1.—POST-MORTEM PATHOLOGY. A laboratory course on Tuesday, Wednesday and Friday afternoons during the 1st term. This

course will include *post-mortem* technique, gross pathology, morbid histology, and clinical bacteriology. Required of third-year students. Four hours.

2.—ADVANCED POST-MORTEM PATHOLOGY. A continuation of course 1, on Tuesday and Friday afternoons during the 2d term. Four hours.

3.—MICROSCOPICAL AND CLINICAL DIAGNOSIS. A laboratory course. Two forenoons each week. Four hours, 1st term, Tuesday and Saturday. Required of fourth-year students.

4.—SPECIAL TECHNIQUE. A laboratory course for advanced students. Three hours, 2d term, 10 to 12, Monday, Tuesday, and Friday. Elective.

PEDIATRICS.

The required work of this department begins during the second term of the third year with a course of lectures, and is continued throughout the fourth year with section clinics—one each week.

1.—DISEASES OF NUTRITION. Lectures. 1st term, Saturday, at 11. Elective for fourth-year students.

2.—DISEASES OF CHILDREN. Lectures. One hour, 2d term, Wednesday, at 10. Required of third-year students.

3.—CLINICAL INSTRUCTION, in sections of ten students. One hour, 1st term. Required of fourth-year students.

4.—SAME. One hour, 2d term. Required of fourth-year students.

RHINOLOGY AND LARYNGOLOGY.

The work of this department is begun during the third year, in the 2d term, and is continued through the first term of the fourth year. Both the didactic and clinical work is given in the dispensaries. For the advanced student and specialist, Doctor Foster's work at St. Margaret's will prove especially instructive. This is given regularly to fourth-year students in the ward classes.

1.—CLINICAL INSTRUCTION. 2d term. Required of third-year students. This work is given to groups, not exceeding ten in number, who are taught the anatomy and pathology of the parts and the technique of examination and treatment.

2.—SAME. 1st term. Required of fourth-year students.

SURGERY.

THIRD YEAR, FIRST TERM.

The general principles of surgery having been taught during his second year, the student now begins the study of regional surgery. Four lectures per week are delivered by Doctors Binnie, Robinson and Schaufler, on the diseases of the abdomen, thorax, spine, blood and lymph, vascular systems, etc. Doctor Block gives one lecture per week on genito-urinary surgery. The clinical instruction during this term comprises two hours at the city hospital and one hour at the dispensary each week.

THIRD YEAR, SECOND TERM.

During the second term, Dr. E. G. Blair devotes one hour each week to lectures on the surgery of the head and neck. Doctor Schaufler lectures on orthopedic surgery one hour weekly and spends a like period in clinical and practical work. The city hospital and dispensary clinics are the same as during the first term.

FOURTH YEAR, FIRST TERM.

During this term the student spends one hour weekly listening to lectures on rectal surgery. Doctor Perkins delivers two lectures per week on surgical diagnosis. For two weeks, each student devotes his whole time to ward work in St. Margaret's Hospital, being excused from all conflicting studies during this period. Three hours weekly are devoted to general clinical work. Operative technique is taught during two hours each week.

FOURTH YEAR, SECOND TERM.

No didactic work is done in surgery during this term. During the session the student devotes 105 hours to clinics in the amphitheaters of various hospitals; seventy-two hours to dispensary clinics in rectal, genito-urinary and other special applications of surgery; and thirty-six hours to practical work on operative technique. The ward work at St. Margaret's, Bethany and the Missouri Pacific hospitals is especially valuable at this stage of the student's experience. In detail the courses are as follows:

1.—REGIONAL SURGERY. Lectures. Four hours, 1st term, Monday, Tuesday, Wednesday, and Thursday, at 9. Required of third-year students.

2.—GENITO-URINARY SURGERY. Lectures. One hour, both terms, Friday, at 9. Required of third-year students.

3.—CLINICAL SURGERY. One hour, both terms. Required of third-year students. Saturday, at 10, at the General (City) Hospital.

4.—CLINICAL SURGERY. One hour, both terms. Required of third-year students. Monday, at 3, or Thursday, at 1, at the North End Dispensary.

5.—REGIONAL SURGERY. One hour, 2d term, Wednesday, at 9. Required of third-year students.

6.—ORTHOPEDIC SURGERY. Lectures and demonstrations. Two hours, Wednesday, from 3 to 6. Required of third-year students.

7.—SURGICAL DIAGNOSIS. Lectures and demonstrations. Two hours, 1st term. Required of fourth-year students. Monday and Friday, at 8.

8.—CLINICAL SURGERY. Amphitheater clinics at St. Joseph's Hospital. Both terms, credit three hours, Wednesday and Thursday, from 9 to 12.

9.—WARD CLASSES at St. Margaret's, the Missouri Pacific, Bethany, and the Eleanor Taylor Bell Memorial hospitals. Credit, one hour for each nine forenoons. One hour each term required of fourth-year students.

10.—OPERATIVE TECHNIQUE. Laboratory. One hour, both terms. Monday and Thursday, at 3.

11.—RECTAL SURGERY. Lectures and demonstrations. One hour, 1st term, Wednesday, at 3. Required of fourth-year students.

12.—DISPENSARY CLINICS in genito-urinary and rectal surgery. One hour, 3d term. Required of fourth-year students.

THERAPEUTICS.

This is a subdivision of the department of internal medicine, and teaches the application of pharmacological and mechanical agents to the treatment of the sick. The following courses are offered:

4.—THERAPEUTICS. Lectures and text-book recitations. Two hours, 1st term, Tuesday and Thursday, at 11.

5.—THERAPEUTICS. Lectures. Two hours, 2d term, Monday and Friday, at 11. Required of third-year students.

6.—SUMMARY OF THERAPEUTICS. Lectures. One hour, 1st term, Saturday, at 10. Elective.

7.—ELECTROTHERAPY. Sectional clinics. 2d term. Required of fourth-year students. Credit, one hour.

8.—ELECTROTHERAPEUTICS. Lectures. One hour, 2d term, Friday, at 11. Required of fourth-year students.

9.—ELECTROTHERAPY. Clinical instruction. One hour, 1st term, (a), Monday, or (b), Thursday, at 4. Elective.

10.—MASSAGE AND HYDROTHERAPY. Practical exercises. One hour, both terms. Daily, by appointment.

TRAINING SCHOOL FOR NURSES.

FACULTY.

FRANK STRONG, Ph. D., President.

PEARL L. LAPTAD, Principal, Lecturer on Nursing.

GEORGE HOWARD HOXIE, A. M., M. D., Lecturer on Medicine.

ROBERT MCE. SCHAUFFLER, A. B., M. D., Lecturer on Surgery.

WILLIAM KIRK TRIMBLE, M. D., Lecturer on Urinalysis.

MAX GOLDMAN, M. D., Lecturer on Physiology.

O. M. LONGENECKER, M. D., Lecturer on Materia Medica and Dispensing.

CHARLES C. PAYNE, M. D., Lecturer on Anatomy, Hydrotherapy, and Massage.

J. H. LANING, M. D., Lecturer on Dietetics.

FRANK H. WEISS, Ph. G., M. D., Lecturer on Infant Feeding and Pediatrics.

DON CARLOS GUFFEY, A. B., M. D., Lecturer on Obstetrics.

HISTORY AND EQUIPMENT.

This school was established July 1, 1906, at the opening of the Eleanor Taylor Bell Memorial Hospital in Rosedale. In this hospital especial attention is given to the care and treatment of patients. Thus diet, hydrotherapy, massage and electrotherapy are all utilized and afford the pupil nurses an exceptional opportunity for learning the more difficult matters connected with the care of nervous and chronic diseases. In the new addition to the hospital operative surgery will be shown, and in the city dispensary the care of emergency patients and lying-in cases is thoroughly taught.

REQUIREMENTS FOR ADMISSION.

Women wishing to enter the school must make formal application to the superintendent of nurses. The applicant should send with the application blank a letter giving proof of the educational advantages which she has enjoyed, and the manner in which her life has been spent; also, a testimonial as to character from a clergyman, and a certificate from her medical attendant that she is in good health. Women of superior education and refinement will be given preference.

The probationary period is three months, at the end of which time the candidate, if accepted, agrees to remain the full term of

three years (from which probation term is deducted), and to conform to all rules and regulations of the hospital and school. Probationers will receive board, lodging and laundry work, but no other compensation. At any time during the three years a pupil may be dismissed for any cause deemed sufficient by the hospital board.

CLOTHING AND ARTICLES NEEDED.

Three brown gingham dresses, made with perfectly plain shirt-waists, two-inch box plaits down front of waist, three-inch cuff on sleeves; skirts plain gored, with two tucks three-fourths of an inch wide above a four-inch hem.

Twelve large bleached-muslin aprons, width two yards, length one and one-half inches shorter than dress; bottom hem four inches wide, side hem one inch wide; band two and a half inches wide, fastened with three pearl studs; aprons to be gathered on bands, leaving a four-inch space at the back.

Twelve pairs of bleached-muslin sleeve-protectors, to cover sleeves to elbow; hem at the hand two inches wide, at elbow one inch wide; seam up the inside.

Twelve linen collars, that should be purchased after coming to the hospital, that the style may be uniform.

(Aprons, cuffs and collars of probation uniform may be used with the uniform of the school.)

A good supply of plain underclothing. Each article of clothing should be plainly marked with the nurse's name in full, in indelible ink.

Two bags for soiled articles; one pair blunt-pointed scissors; one napkin-ring; one pair rubbers; one raincoat; one umbrella; one watch, with second-hand.

Shoes must have rubber heels.

Teeth must be in good order.

The dress of accepted nurses is of a blue and white striped goods; cuffs and collars same as worn by probationers; and apron the same, but with a large bib attached, which will almost cover the front of the waist; and a very simple cap.

RULES FOR PUPIL NURSES.

The hour for rising is 5:45 A. M. Before going on duty, each nurse must leave her room in good order, ready for inspection at any time.

All pupils are expected to be in their rooms at 10 P. M., unless they have special permission to the contrary, given by the principal of the school. Lights in the rooms must be extinguished by 10:30 P. M.

Day nurses go on duty at 7 A. M.

Night nurses go on duty at 7 P. M.

Night nurses must be in their rooms from 9 A. M. to 4 P. M., and will not be permitted to go out between these hours without permission from the principal.

Hours for meals—day nurses: Breakfast, 6:30 A. M.; first dinner, 12 M.; second dinner, 12:45 P. M.; first supper, 6:15 P. M.; second supper, 7 P. M. Night nurses: Breakfast, 7:15 A. M.; supper, 6:15 P. M.

Nurses must be prompt in coming to meals, and must not linger in the dining-room after meals.

Nurses off duty must go to first dinner and first supper, unless excused by the principal.

No food is provided out of the appointed time, except when ordered by the principal.

Nurses are not to go into the kitchen except as duty requires, and are not to give orders to the help.

Nurses may entertain their friends when off duty.

No visitors are to be invited to meals without permission of the principal.

No visitors may be entertained over night.

Nurses must not leave their wards without permission.

When off duty, nurses must not visit the wards of other departments of the hospital without permission of the principal. The telephone may not be used for personal matter without permission.

Nurses, when ill, must report to the principal, who will see that they are prescribed for, if necessary, by a physician. Nurses must not obtain medicine from the hospital or seek medical advice without permission.

Nurses will, at all times, be expected to show the greatest consideration for the comfort, welfare and happiness of patients; to be quiet and gentle in attending to their duties; and courteous in their manners to one another. They must give special attention to their personal appearance at all times.

LAUNDRY REGULATIONS.

Clothes must be ready for the laundry on Monday at seven A. M. The following articles are allowed each nurse per week:

1 dress.	2 vests.
1 colored skirt.	2 pairs drawers.
1 short white skirt.	3 pairs stockings.
6 aprons.	2 corset-covers.
6 pairs sleeve-protectors.	1 nightgown.
6 collars.	6 handkerchiefs.
1 wrapper every two weeks.	

All clothing in excess of the specified numbers of each article and all elaborately trimmed garments will be returned unwashed.

All clothing must be distinctly marked where the name will be easily seen by the laundress.

COURSE OF STUDY.

Formal instruction is given from October to June; but students are admitted at any time when there is a vacancy. The following outline serves as a basis for the formal studies:

Anatomy.

FIRST YEAR.

1. Topographical and regional anatomy.
2. Tissues: Physical and chemical constitution; classification.
3. Framework: Morphology of bones and muscles.
4. Systems of organs: Digestive; respiratory; glandular; genito-urinary; nervous.

Chemistry.

Outlines of general chemistry.

Materia Medica.

1. Forms and properties of the mainly used drugs.
2. Dispensing.
3. Methods of administering drugs.

Physiology.

1. Properties of tissues (irritability, etc.).
2. Nutrition and waste.
3. Nervous reactions.

Pathology.

1. Principles of wound healing.
2. Bacteriology and immunity.

Hygiene.

1. Personal: Exercise; dress; cleanliness.
2. Domestic: Ventilation; heating; light; cleanliness, etc.

Dietetics.

1. General principles of feeding in health and disease.
2. Classification of foods.
3. Care and preservation of foods.
4. Methods of cooking.

Hydrotherapy.

1. General principles.
2. The use of apparatus.

Massage.

1. Technique of the various movements.
2. Application to the diseased body.

Nursing.

1. Bed-making.
2. Care of rooms.
3. Care of instruments and utensils.
4. Care of patient's person.
5. Record-making.

SECOND YEAR.

Physiology.

1. Digestion.
2. Heat production and dissipation.
3. Urinalysis.
4. Fecal examinations.

Hygiene.

1. The prevention of diseases, especially the transmissible.
2. House and municipal sewage, etc.

Dietetics.

1. Diet in consumption.
2. Diet in nervous disorders.
3. Diet in surgical diseases.
4. Arrangement of dietaries.

Hydrotherapy.

Special applications: Technique.

Massage.

1. Limitations of application.
2. Interpretation of prescriptions.

Nursing.

1. Care of emergency patients.
2. Care of convalescents.
3. Examining-room nursing.

Surgery.

1. Methods of sterilization.
2. Asepsis and antisepsis.
3. Anesthesia.
4. Bandaging.

Materia Medica.

1. Practice in dispensing.
2. Toxicology.
3. Pharmacognosy.

THIRD YEAR.

Dietetics.

1. Diet in digestive disorders.
2. Diet in circulatory and renal disorders.
3. Diet in skin disorders.
4. Diet in obesity.

Obstetrics.

1. Care of the pregnant and parturient woman.
2. Embryology and the physiology of pregnancy and labor.
3. Asepsis in the lying-in room.

Surgery.

1. Care of instruments.
2. Dressings.
3. Methods of attendance at the operating table.
4. Methods in anesthetics.

Pathology.

1. Causation of disease.
2. Hematology.
3. *Post-mortems* and their significance.

Medicine.

1. The fevers.
2. Transmissible diseases.
3. Renal and cardiac diseases.
4. Skin and venereal diseases.

Pediatrics.

1. The care and feeding of infants.
2. Eruptive diseases.
3. Care of teeth, hair, skin, etc.
4. Training of children.

Nursing.

1. The nervous.
2. The insane.
3. Eye and ear cases.

FEES AND EXPENSES.

Candidates for acceptance must provide themselves with the probationer's outfit. After acceptance, however, pupil nurses will be furnished their uniforms and text-books. Since their board, lodging and necessary laundry are also furnished by the University, the students are put to but trifling expense during their course of training. Since the demand for trained nurses is so great and the remuneration so generous, no young, ambitious woman, qualified for the profession, should feel herself barred by poverty.

THE HOSPITAL.

Patients admitted to this hospital are of two classes: private and clinical. Private patients are such as seek the services of some particular member of the staff. They are therefore expected to pay, not only the board bills of the hospital, but also for all service of the attendants and physicians. Clinical patients are such as are recommended as worthy by their family physicians. They pay only for the actual cost of their board (\$2 a day for a single room and \$1.50 a day for a bed in a ward). They receive the best of attention, but may not dictate which physicians or attendants they shall have, and what study shall be made of their cases. The superintendent of the hospital is the dean of the clinical department of the School of Medicine—Dr. George Howard Hoxie—who is also the attending physician. The attending surgeon is Dr. Robert McEwen Schauffler. The house physician is Dr. Clarence B. Francisco. The hydrotherapist is Dr. Charles C. Payne, and the electrotherapist, Dr. Fay P. Clark. The rest of the faculty of the School of Medicine is on the consulting staff.

ACCEPTED PUPIL NURSES.

Margaret Claire Bowen, Lawrence, Kan.
Frances Buckles, Lancaster, Kan.
Myrtle Vance Gragg, Lawrence, Kan.
Anna Woodward Hemphill, Reno, Kan.
Nellie E. Taylor, Sedgwick, Kan.
Edith Ainswood Tuttle, Lyons, Kan.

VIII. THE SUMMER SESSION.

FACULTY.

- FRANK STRONG, Ph. D., Chancellor, and President of the Faculty.
ARTHUR T. WALKER, Ph. D., Director of the Summer Session,
and Professor of Latin Language and Literature.
WILLIAM H. CARRUTH, Ph. D., Vice-President of the Faculties,
and Professor of Germanic Languages and Literatures.
EPHRAIM MILLER, Ph. D., Professor of Mathematics and As-
tronomy.
JAMES W. GREEN, A. M., Professor of Law.
EDGAR H. S. BAILEY, Ph. D., Professor of Chemistry and Metal-
lurgy.
FRANK W. BLACKMAR, Ph. D., Professor of Sociology and Eco-
nomics.
CHARLES G. DUNLAP, Litt. D., Professor of English Literature.
WILLIAM C. STEVENS, M. S., Professor of Botany.
ARVIN S. OLIN, A. M., Professor of Education.
EUGENIE GALLOO, A. M., Professor of Romance Languages and
Literatures.
WILBUR C. ABBOTT, B. Litt., Professor of European History.
CHARLES S. SKILTON, A. B., Professor of Musical Theory and
Organ.
CHARLES E. HUBACH, Professor of Voice.
JOHN E. BOODIN, Ph. D., Professor of Philosophy.
IDA H. HYDE, Ph. D., Professor of Physiology.
BRUCE V. HILL, Ph. D., Acting Professor of Physics and Elec-
trical Engineering.
JAMES NAISMITH, M. D., Professor of Physical Education.
SAMUEL J. HUNTER, A. M., Professor of Entomology.
WILLIAM E. HIGGINS, LL. B., Professor of Law.
CLARENCE E. MCCLUNG, Ph. D., Professor of Zoölogy.
MILES W. STERLING, A. M., Associate Professor of Greek.
RAPHAEL D. O'LEARY, A. B., Associate Professor of English.
ELMER F. ENGEL, A. M., Associate Professor of German.
HAMILTON P. CADY, Ph. D., Associate Professor of Chemistry.
EDGAR G. FRAZIER, Ph. B., Associate Professor of Public Speak-
ing and Debate.
JOHN N. VAN DER VRIES, Ph. D., Associate Professor of Mathe-
matics.

FRANK E. WARD, Superintendent of Fowler Shops and Shop Instruction.

HENRY O. KRUSE, A. M., Assistant Professor of German.

ELISE NEUEN SCHWANDER, A. B., Assistant Professor of Romance Languages.

HERBERT W. EMERSON, B. S., Assistant Professor of Pharmacy.

GEORGE W. HANSON, Forge and Foundry Instructor.

FRANK E. JONES, Instructor in Carpentry and Pattern-making.

HELEN PHIPPS, Instructor in Violin.

LOUIS BUCH, Instructor in Violoncello.

MAUDE B. COOKE, Assistant Instructor in Piano.

MAUD MILLER, Mus. B., Assistant Instructor in Piano.

JULIA RIGHTER, Mus. B., Assistant Instructor in Piano.

LOUISE WIEDEMANN, Mus. B., Assistant Instructor in Piano.

AUGUSTA FLINTOM, Mus. B., Assistant Instructor in Voice.

LARRY M. PEACE, A. B., Preparator and Demonstrator in the Botanical Laboratory.

FRANK RUPERT, A. B., Laboratory Assistant in Chemistry.

MARTHA WHITNEY, A. M., Assistant in Latin.

Instructors from Other Universities.

ULRICH BONNELL PHILLIPS, Ph. D., Assistant Professor of American History, University of Wisconsin.

J. C. JONES, A. B., Assistant in Geology, University of Chicago.

Special Lecturers.

E. T. FAIRCHILD, State Superintendent of Public Instruction.

W. M. DAVIDSON, Superintendent of Instruction, Omaha, Neb.

ALCEE FORTIER, Professor of Romance Languages, Tulane University.

PURPOSES OF THE SUMMER SESSION.

In accordance with a general desire to increase the usefulness of the University and bring its resources nearer to the people of the state, the Summer Session was established to meet the demands of the following classes:

1. *City and county superintendents, principals, and teachers*, especially those having work of high-school grade, to enable them to review their work, to become familiar with the latest and best methods, and thus prepare to do their own work better. Every department of the University in which entrance credits are accepted offers one or more courses intended to assist high-school teachers of that subject. If teachers do not find such courses as they need, the University will be grateful for suggestions.

2. *Instructors in other colleges* who may wish the opportunity

of further study, of observing the work in their subject as pursued at the University of Kansas, and of using the laboratories and library of the University.

3. *Students preparing to enter the University*, to enable them to complete their preparation. No special classes are conducted for such students, but entrance credits may be secured in botany, chemistry, French, German, Latin, and zoölogy.

4. *University students*, whether already matriculated or coming for the first time into membership in the University, to enable them to correct irregularities in their standing or to attain standing in the University. Almost all the courses are open to such students.

5. *Graduate students*, especially such as have already completed a portion of their work for the second degree and are prevented by regular employment from attending the University during other sessions. No course is open for graduate credit unless its description so states.

COOL PLACE FOR SUMMER WORK.

The chief objection that has been urged against the Summer Session is the claim that the climate of Kansas in summer is too oppressive for intense mental exertion. But a comparison of conditions with those in other states leads to the conclusion that the heat of Kansas is no more trying than that of some states in which very large summer schools exist. Moreover, there is no cooler place in all Kansas in summer than the breezy heights of Mount Oread. The heavy walls of the buildings, the plentiful shade of the campus and the perpetual breeze make this the most suitable place in the state for intellectual work during the summer. Furthermore, it is noted that the teachers of Kansas have for years and by thousands endured the heat and the pressure of summer institutes, and the Summer Session at the University will be a moderate trial in comparison. As the Summer Session lasts only six weeks, there is no reason to fear that the work will exhaust either instructors or students. Precautions are taken to prevent enthusiastic students from undertaking too much work. The University is supplied with distilled water, and the city supply has often been analyzed and found germ-free.

ATTENDANCE.

The Summer Session has completed its fourth year, and the attendance and quality of work have justified the experiment. The attendance has grown as follows: In 1903, 135; in 1904, 169; in

1905, 232; in 1906, 260. This means a steady and healthy growth, which the University confidently expects to continue. The work has proven to be of good quality.

ADMISSION TO SUMMER SESSION.

The classes of the Summer Session are open to all who can satisfy the instructors that their preparation is sufficient to enable them to do the work properly; that is, a student may register in the Summer Session and attend its classes without meeting the requirements for admission which are in force during the regular sessions. *But University credit is given only to those who are regularly matriculated in the University.* A record is kept of the work of those who are not matriculated, and if they matriculate in the future they will receive credit for their work in the Summer Session.

MATRICULATION.

Students who desire to matriculate in the summer must meet the requirements for admission which are in force during the regular sessions.

REGISTRATION.

The days of registration are Monday, Tuesday, Thursday, Friday, Saturday, and Monday, June 3, 4, 6, 7, 8, and 10, 1907. After June 10 no registration for full credit will be allowed except by previous arrangement with the Director. Since the Summer Session is short at best, it is strongly urged that all students be present on the opening day, June 6. On that day it is expected that classroom exercises will begin in all courses. Regular classroom exercises will be held on Friday, June 7, and also on Saturday, June 8, but on no other Saturday of the session.

The work of registration will be carried on in the Registrar's office. The applicant will—

1. Pay the required fee at the window of the Secretary's office, taking a receipt. This fee will be returned on demand at any time during the days of registration if the applicant is unable to enter the desired classes.

2. Fill up and deposit with the Director an application for enrolment, after consultation with the Director if necessary.

3. Get a registration card from the Registrar.

On the following Monday or Tuesday instructors will receive from the office lists of the students enrolled in their classes. Students whose names do not appear on those lists will not be considered members of the classes until they have registered.

LATE REGISTRATION.

Those who enter later than June 10 will be allowed to register for credit, but not for the full amount of six hours, because they will have to make good what they have lost during the early days of the session. But teachers whose duties prevent their entering at the beginning of the session are invited to correspond with the Director in advance. In such cases arrangements can sometimes be made by which nearly the full amount can be given. This can be done only by previous arrangement.

FEES AND EXPENSES.

The fee for Kansas students for the Summer Session will be ten dollars, for non-residents fifteen dollars, which will cover admission to all courses excepting those in music. For certain laboratory courses there will be, in addition, the cost of materials.

The regular matriculation fee is five dollars, payable but once. Students in the Summer Session are not required to pay this fee, but will be required to do so if they afterwards attend the regular sessions of the University.

Lawrence is well provided with boarding-houses and restaurants, and a sufficient number of these will continue in operation to supply all demands of the Summer Session. Good board, including room and service, may be had in private families at from \$3.50 to \$5 per week. The stewards of some of the existing student boarding clubs will remain on the ground and be prepared to carry on their organizations.

A list of rooms and boarding-places is already prepared, and students can obtain information from the Registrar and engage rooms in advance if they so desire.

AMOUNT OF WORK.

The normal amount of credit to be obtained in the Summer Session is five hours; the maximum is six hours. Under no circumstances will registration for more than six hours credit be permitted. The amount of credit given for each course is indicated in the statement of that course. As there are no one-hour courses, a student who wishes credit may enroll in no more than

One five-hour course, or

One three-hour and one two-hour course, or

Two three-hour courses, or

Three two-hour courses.

Students who do not enroll for credit will be registered for no more work than others, but written permission may be given them

to attend one other class as regular visitors. It is believed, however, that even those who do not desire credit will be most benefited by their summer's work if they confine themselves to the work for which they are enrolled.

NATURE OF COURSES.

The courses offered in the Summer Session are for the most part courses which are offered in the regular sessions, or modifications of such courses. Most of the courses have been selected with a view to meeting the wishes of teachers, and many of them have been modified in some details for the same purpose. But such modifications are not so great as to make the courses unsuitable for students who do not intend to teach; nor do they lower the grade of the work.

Regular students of the University must be on their guard against duplicating work. Some of the Summer Session courses, while not exactly equivalent to regular courses, are so nearly equivalent to them that credit will not be given for both. In such cases a warning is given in the statement of the course by the words, "This course will be regarded as a duplicate of —." Students who have had the regular course may not take for credit the Summer Session course. Students who take the Summer Session course will be barred in the future from the regular course.

COURSES OFFERED CONDITIONALLY.

While most of the courses listed in this Bulletin are offered unconditionally, a few are offered only on condition that the demand warrants them. In each case this is indicated in the statement of the course. Not quite all of the courses which are offered conditionally can be given. Probably those which have a sufficient number of registered students by Friday night, June 7, will be regarded as established, and the rest will be removed from the list of possibilities. In deciding on the courses to be retained, no student will be counted unless his fees are paid and he is regularly registered. Fees will be returned if the class is not given and the applicant wishes to enter no other class. Students who intend to elect any of these courses are requested to notify either the instructor or the Director in advance.

LECTURES.

At five o'clock of every working-day of the Session a lecture will be given, open to all who have paid the general fee.

JUNE 8.—Professor Carruth. "The Nibelungenlied" (illustrated).

JUNE 10 to 14.—Professor Alc  e Fortier, of Tulane University. Five lectures on the History of Louisiana.

JUNE 17 to 21.—Professor Alc  e Fortier. Five lectures on Modern France.

JUNE 17.—State Superintendent E. T. Fairchild. "Consolidation, the Solution of the Rural School Problem."

JUNE 18.—State Superintendent E. T. Fairchild. "Recent School Law Decisions."

JUNE 19.—State Superintendent E. T. Fairchild. "The Best Training for Teachers."

JUNE 20.—State Superintendent E. T. Fairchild. "Interrelation of Teacher and Superintendent."

JUNE 24 to 27.—Superintendent W. M. Davidson, of Omaha. Four Lectures on the Problems of a Superintendent.

JUNE 28.—Professor Olin. "Horace Mann and the Common School Revival."

JULY 1.—Professor Boodin. "The Meaning of Education."

JULY 2.—Professor Naismith. "High School Athletics" (illustrated).

JULY 3.—Professor Bailey. "The Sanitation of School Houses."

JULY 5.—Professor Miller. "Nebulous Fields and Star Clouds" (illustrated).

JULY 8.—Professor Dunlap. "Robert Louis Stevenson."

JULY 9.—Professor Blackmar. "Deception and Social Progress."

JULY 10.—Professor Abbott. "Colonel Blood: an Historical Study."

JULY 11.—Professor Hunter. "Insect Colors and their Uses" (illustrated).

JULY 12.—Professor Frazier. "Ibsen's Peer Gynt."

JULY 15.—Professor Johnson. "Some High School Problems"

CHAPEL.

Religious exercises are held in the University chapel from 10:00 to 10:15. Though attendance at chapel is not required of students, all are cordially invited, and the services are made as attractive and profitable as possible. They consist of Scripture reading, hymns, prayer, and occasional brief addresses.

LIST OF COURSES.

The Summer Session courses offered by each department are numbered consecutively with Roman numerals. Arabic numerals refer to the courses as numbered in the General Catalogue for 1905-'06. For example, I (=2) means that course I of *this* catalogue is identical with course 2 of the General Catalogue. I (nearly =2) means that course I of *this* catalogue is a modification (generally a condensation) of course 2 of the General Catalogue.

Unless the contrary is distinctly stated, each of the following courses will be given, no matter how few students elect it.

All classes meet five days a week, Monday to Friday, and also on Saturday, June 8.

BOTANY.

I.—METHODS IN BIOLOGICAL INSTRUCTION. Three hours credit. 3 to 5. Designed especially for teachers and prospective teachers of biology in high schools. What shall the year of biology in the high schools be? and how can it be carried on to best advantage? These are fundamentally the questions which this course is intended to answer. In the majority of high schools the teacher of biology has still to teach other subjects. Frequently he is teaching biology from the exigencies of the situation, and not from choice or preparation. This course in biological methods will be helpful to such teachers. It is planned to benefit teachers also who have had their college training in biology and are now concerned in improving and enriching their high-school course.

The subjects discussed in this course will be: What lines of work are of most worth in elementary biological instruction? How to obtain and prepare materials for study, in plenty, and when they are most needed; the equipment of the high-school laboratory; the balance between laboratory, field and book work; what the pupil's laboratory book should be, illustrated by laboratory books from different schools; the value of physiological experiments in an elementary course; the preparation of microscope slides, lantern slides, photographs, and charts; biological books for the high-school library; the recommended courses of the North Central Association of Colleges and Secondary Schools, and of the American Societies of Botanists and of Zoölogists. Professor Stevens and Professor McClung.

II.—ANATOMY OF PLANTS. Three hours credit. Hours by appointment. A study of the physiological tissue systems, with particular reference to the adaptation of plants to their environments through the differentiation of tissues. Lectures, reading, and demonstrations by means of microscope, microscope projections, and photomicrographs. Open to all undergraduate students. Professor Stevens.

III (=4).—PLANT PHYSIOLOGY. Five hours credit. Hours by appointment. An experimental study of the functions of plants. Laboratory work, reading, and discussions. Open to Juniors, Seniors, and Graduates. Professor Stevens.

IV.—Opportunities will be offered graduate students to carry on advanced work in lines for which they are prepared and for which the department is equipped; but specific courses cannot be counted on except after correspondence.

CHEMISTRY.

Since the following courses involve laboratory work, the student will be obliged to procure a coupon book at the office of the Secretary, and coupons will be removed from this from time to time to cover the expenses of the course. The apparatus needed will be loaned the students without expense, but they are required to pay for apparatus actually broken, destroyed, or used up.

I (nearly = 1 and 2).—INTRODUCTORY CHEMISTRY. Four hours credit. Lecture, 9 to 10. Three hours of laboratory work, which may be any three of the four remaining hours from 7 to 12:15. The study of the chemical elements and their compounds, based on Remsen's *Briefer Course in Chemistry*. Students desiring to secure the full five hours credit of courses 1 and 2 may take special examinations by making previous arrangements with the instructor. Professor Bailey and Mr. Rupert.

II.—TEACHERS' COURSE IN GENERAL CHEMISTRY. Two hours credit. 11:15 to 12:15. This course is designed especially for the benefit of teachers of chemistry and of those who propose to teach. It will consist of demonstrations in regard to the use of simple and inexpensive apparatus, directions for setting up apparatus, suggestions for the arrangement and equipment of laboratories, and conferences on the making and purchase of apparatus and chemicals. Suggestions will also be made in regard to the purchase of books and the most economical methods of laboratory management. The course will be of special value to teachers whose work on this subject has not been carried on recently and who are not familiar with the methods of teaching at present in use. It will also be

valuable to teachers whose work has been elementary and who wish to prepare for more advanced work. A good general knowledge of chemistry is required of students taking this course. Professor Bailey.

III (=4).—QUALITATIVE ANALYSIS. Five hours credit. 7 to 12:15. This course will include lectures and laboratory work, using Bailey and Cady's *Guide to the Study of Qualitative Analysis*, and Ostwald's *Principles of Inorganic Chemistry*. It must be preceded by the course in advanced inorganic chemistry; but pharmacy and medical students who have completed one course in elementary chemistry will be admitted to this course and given credit in those schools. Associate Professor Cady and Mr. Rupert.

IV (=17).—ORGANIC CHEMISTRY. Five hours credit. 7 to 12:15. A study of the hydrocarbons and their derivatives. Undergraduate and graduate credit. Associate Professor Cady and Mr. Rupert.

V (=8).—QUANTITATIVE ANALYSIS. Five hours credit. 7 to 12:15. This course will consist almost exclusively of laboratory work, and must be preceded by the course in qualitative analysis. The work will require at least five hours of laboratory work daily. Undergraduate and graduate credit. Professor Bailey and Mr. Rupert.

VI.—The chemical laboratories offer facilities for research work in analytical, physical and organic chemistry to graduates of this or other institutions who are prepared to do such work. The courses will be accepted for credit in the Graduate School. Students who contemplate work of this character should make arrangements with the chemistry department before coming to the University.

For courses in drug analysis and in physiological chemistry, see Pharmacy.

ECONOMICS.

(See Sociology and Economics.)

EDUCATION.

I (nearly =5).—SCHOOL ECONOMY. Two hours credit. 8 to 9. A study of the conditions and principles essential to efficient school work, school hygiene, organization and authorities of the school, financial support, courses of study, government. This course will be regarded as a duplicate of 5. Professor Olin.

II (=9). EDUCATIONAL THEORY. Two hours credit. 9 to 10. A critical study of the educational doctrines found in Plato's *Re-*

public, Quintilian's *Institutes of Oratory*, and Locke's *Thoughts Concerning Education*, including a comparison with present-day educational ideals. This course may be taken as graduate work; the preparation of a thesis in addition to class work will be required for graduate credit. This course will be regarded as a duplicate of 9. Professor Olin.

III (nearly = 7).—SCHOOL SUPERVISION. (*Not given for less than six students.*) Two hours credit. 10:15 to 11:15. This course is largely based on the texts of Payne, Pickard, and Chancellor, and the reports of the Committees of Twelve and Fifteen. Required readings, class discussions, and lectures. This course will be regarded as a duplicate of 7. Professor Olin.

ENGLISH LANGUAGE.

I.—RHETORIC AND THEME-WRITING. Two hours credit, which will be assigned as English language and rhetoric 1 in the College. 8 to 9. Primarily intended for teachers desirous of doing review and practice work, but may be taken for Freshman credit as indicated. Lectures, conferences, and daily themes. Associate Professor O'Leary.

II (nearly = 24).—METHODS OF TEACHING ENGLISH. Two hours credit. 9 to 10. Review of principles of teaching English literature, English composition and English language by means of lectures, library reading, reports, and illustrative work. Open to advanced undergraduates and to Graduates. Associate Professor O'Leary.

ENGLISH LITERATURE.

I (nearly = 15).—ENGLISH LITERATURE OF THE NINETEENTH CENTURY. Two hours credit. 10:15 to 11:15. Prose, exclusive of the novel. The authors studied are Lamb, DeQuincey, Hazlitt, Newman, Landor, and Ruskin. Required library readings, with the preparation of a thesis. This course will be regarded as a duplicate of 15. Open to advanced undergraduates and to Graduates. Professor Dunlap.

II (nearly = 8).—SHAKSPERE. Two hours credit. 11:15 to 12:15. Lectures upon the life and times of Shakspeare. Study and interpretation of two plays, with special attention to literary form, plot construction, character study, and Elizabethan grammar. Preparation of a thesis. This course will be regarded as a duplicate of 8. Open to advanced undergraduates and to Graduates. Professor Dunlap.

ENTOMOLOGY.

It is not the purpose of the department to repeat in the summer the regular winter courses, but rather to offer such work as can be conducted profitably only in the summer months. Accordingly, special attention will be given to the study of the living forms, and the work will be conducted in part as an outdoor study.

I.—FIELD ENTOMOLOGY. Three or five hours credit. A minimum of fifteen or twenty-five hours a week, ten of which will be 10:15 to 12:15; the others by arrangement. This course is of equal rank with courses 1 and 3 of the College, a taxonomic and biologic study of the insect fauna of this region. This course involves much experimental work. Field-studies are for the purpose of amplifying observations made in the laboratory. Excursions to localities where insect life of special interest occurs. The course may be counted as three or five of the ten hours of Freshman and Sophomore work offered by the department. Professor Hunter.

II (nearly = 7).—OUTDOOR STUDIES FOR TEACHERS. Two hours credit. A minimum of ten hours a week, five of which will be 9 to 10; the others by arrangement. This course deals with the life-histories, behavior and activities of some of our more interesting forms of insect life. In the laboratory, the work consists of an anatomical study of type forms, and the preparation and proper methods of conducting vivaria and aquaria. The field excursions have in view the study of restricted areas, the fauna of such, together with environmental conditions, such as forest life, brook life, pond life. The needs of those interested in nature study, and especially those engaged in teaching nature study and insect anatomy and biology, are fully considered. Open to Juniors and Seniors and to teachers of biology. The course will be regarded as a duplicate of 7. Professor Hunter.

III.—LABORATORY METHODS AND PREPARATION OF ILLUSTRATIVE CABINETS. Three hours credit. A minimum of fifteen hours a week, ten of which will be from 10:15 to 12:15; the others by arrangement. The purpose of this course is the preparation of illustrative material and its arrangement in portable glass cabinets. These cabinets are the same as those in regular use in the department, and when completed under direction are to be the property of the one preparing them. Teachers may thus secure necessary specimens and biologic material to illustrate and amplify their work in their own respective laboratories. Open to Juniors and Seniors and teachers of biology. Professor Hunter.

IV.—RESEARCH STUDENTS and students prepared to do advanced

work will be afforded the privileges of the laboratories and the library. It will be advisable, however, for such to arrange for this work beforehand, either in person or by correspondence.

FRENCH.

I (=1).—ELEMENTARY FRENCH. Five hours credit. Two and one-half hours daily, beginning at 8. A course for beginners, including the essentials of the grammar and easy reading, with careful drill in pronunciation. Oral and written exercises. Text-book, Fraser and Squair's *French Grammar*. Professor Galloo.

II (nearly = 3).—MODERN FRENCH PROSE. Two hours credit. 8 to 9. (*Not given for less than six students.*) Translation and reading of some works of Mérimée, George Sand, Anatole France, and René Bazin. This course will be regarded as a duplicate of 3. Assistant Professor Neuen Schwander.

III (=4).—COMPOSITION. Two hours credit. 9 to 10. (*Not given for less than six students.*) Written exercises intended chiefly as a grammatical review. Oral exercises. Dictation. Assistant Professor Neuen Schwander.

IV (=5).—FRENCH PROSE AND POETRY. Three hours credit. 10:15 to 11:45. (*Not given for less than six students.*) Reading of representative works of the seventeenth, eighteenth and nineteenth centuries. Assistant Professor Neuen Schwander.

V (very nearly = theoretic side of 10).—TEACHERS' COURSE. Two hours credit or none. 10:15 to 11:15. The work will be adapted to the needs of the teachers who may apply for it, and may consist of an inquiry into the present status of the language and the rules governing it, or of a review and elucidation of the grammatical rules, with comparison of text-books and discussion of methods. Text-book: Bevier's *French Grammar* (Holt), with references to the grammars of Fraser and Squair, and Grandgent. Professor Galloo.

GEOLOGY.

I.—PHYSICAL GEOGRAPHY. Five hours credit. This course is intended to prepare teachers for teaching physical geography in the high schools of Kansas. With this in view, the outline published in the University of Kansas High-School Manual, III, beginning on page 78, will be followed. The outline therein given, too lengthy for reproduction here, will be followed as a text, and copies of the same may be had at the University by students who enroll in the class. In an abridged form, the outline is as follows: The earth, its relation to the universe, early conception of size and

shape; the atmosphere; the ocean; ground-water, stream work; shore-lines; present glaciers, past glaciers; lakes; volcanoes; earthquakes; changes of level; types of land surfaces; and laboratory material for physical geography.

In addition to this outline, a general review of the animal and plant kingdoms will be given and a large amount of outdoor work will be done, making observations on geographic conditions around Lawrence and other points within easy reach by train. Also, practice will be had in map-making, including a special study of cartography, ancient and modern. This will require a considerable practice in map-making by use of the plane table. Mr. Jones.

GERMAN.

I (=1).—BEGINNING GERMAN. Five hours credit. Two and one-half hours a day, beginning at 7:30. The first eighteen lessons of the Otis-Carruth *Grammar*, with composition exercises. Carruth's *Reader*, about fifty pages. Open to all students, whether they have had Latin or not. Associate Professor Engel.

II (nearly=20).—TEACHERS' COURSE. Two or four hours credit. 9 to 10. A review of German grammar, for the benefit of those teaching beginning German in Kansas schools. The course will follow the Otis-Carruth *Grammar*, the state text, supplementing the study by comparison with other school grammars, especially Thomas's. Especial attention will be paid to questions of method. Care will be given to pronunciation and to more difficult questions of syntax. Opportunity will be given at least two members of the course to make the credit of this course four hours, by assisting in the conduct of course I. Those who take this course, and in addition courses III and IV, may thus satisfy the requirement of the German department for the teachers' diploma. Open to advanced undergraduates and to Graduates. Associate Professor Engel.

III.—GOETHE'S EGMONT. Two hours credit. 10:15 to 11:15. Translation and comment, with supplementary reading from *Die italienische Reise*. For students who have had German (two years of college grade). Professor Carruth and Assistant Professor Kruse.

IV.—THE DEVELOPMENT OF GERMAN DRAMA. Lectures on the earlier periods, with the reading of three leading Sturm und Drang dramas: "Götz Von Berlichingen," "Sturm und Drang," "Die Räuber." Open to advanced undergraduates and to Graduates. Professor Carruth and Assistant Professor Kruse.

GREEK.

I (=1).—ELEMENTARY GREEK. (*Not given for less than six students.*) Five hours credit. Two and one-half hours daily, beginning at 8. A course in beginning Greek. Associate Professor Sterling.

AMERICAN HISTORY.

I.—THE AMERICAN REVOLUTION. Two hours credit. 10:15 to 11:15. A general view of the British imperial system and of American conditions will be followed by treatment of the constitutional issue, the conflict of ideas and policies, and the process of political revolt and social upheaval. Open to advanced undergraduates and to Graduates. Doctor Phillips.

II.—HISTORY OF THE SOUTH, 1815-'61. Two hours credit. 11:15 to 12:15. After an introductory sketch of the colonization of the South, this course will trace the extension of settlement and the transition from colonial to *ante bellum* conditions. It deals with the expansion of the South as controlled by the system of cotton plantations with slave labor, the conflicts within the South in the effort to adjust this system of life to the situation, and the conflicts between the South and the North in the effort to control the policy of the central government. Open to advanced undergraduates and to Graduates. Doctor Phillips.

EUROPEAN HISTORY.

I.—ANCIENT HISTORY. Two hours credit. 8 to 9. A survey of the chief points in the history of the Mediterranean world in classic times. Special attention will be given to Athens in the fifth century and to the Roman empire from Augustus to Theodosius. The course is designed primarily for those teaching or about to teach history or the classics in the high school, but is open to the general students. The course is not a duplicate of 3 and 4, and it may be taken for graduate credit under certain conditions, by previous arrangement with the instructor. Lectures, recitations, and assigned reading. A knowledge of Greek and Latin, while desirable, is not essential for the work. Special attention will be given to bibliography, methods, and especially geography, by means of the excellent collection of maps available for class use. Professor Abbott.

II.—MEDIÆVAL AND MODERN HISTORY. Two hours credit. 9 to 10. A brief survey of the chief characteristics of mediæval civilization, of the renaissance and the reformation, and the modern period. The course is designed primarily for those teaching or

about to teach history or modern languages, but is open to the general student. The course is not a duplicate of 5 and 6, and it may be taken for graduate credit under certain conditions, by previous arrangement with the instructor. As in the preceding course, attention will be paid to geography, bibliography, and methods of teaching. Lectures, recitations, and assigned reading. Professor Abbott.

LATIN.

I (nearly = 3).—VERGIL'S *ÆNEID*. Three or four hours credit. 10:15 to 11:45 or 12:15. Those who enroll for three hours credit will translate the most significant portions of the first six books and read the remainder of those books in English translations. Those who enroll for four hours credit will translate a proportionately larger amount. The course may be taken either by teachers who desire to review their reading of this author, or by college students who enter with three years of Latin and without Vergil. The course will be regarded as a duplicate of 3, and students who complete it successfully will be admitted to course 4 in the fall. Miss Whitney.

II (nearly = 23).—TEACHER'S COURSE IN VERGIL. Two hours credit. 8 to 9. This course is intended to be of practical assistance to teachers of Vergil, and the exact nature of the course must depend to some extent on the needs of those who elect it. The following are some of the subjects to which a greater or less amount of attention will be given: The metre; reading the verse quantitatively; the life and times of Vergil; the motives of the *Æneid*; the books most helpful to teachers; the manuscripts and the text; a critical study of a few passages for the better appreciation of the work done by the great editors. No considerable portion of the text will be translated in this course, which will in no way duplicate the work of course I. Open to all teachers. Properly prepared students may receive graduate credit for this course, and may enroll for more than two hours credit, with the consent of the instructor. The library is well equipped for advanced work in Vergil. Professor Walker.

LAW.

The courses in law in the Summer Session are designed to assist those who do not have the requisite credits in law to entitle them to enroll regularly in either the Middle or Senior classes of the School of Law, or who desire to shorten the actual time required to complete the three years' course of study. A course has been arranged which will enable a person who enrolls in the Summer

Session of 1907 to graduate after attending two Summer and two regular sessions of the University, provided he has previously completed the preparatory work required for entrance to the Law School, as laid down in the General Catalogue.

The following courses will be given during the Summer Session of 1907:

I.—CRIMINAL LAW. A general survey of the substantive law of crimes, both common law and statutory. Professor Green.

II.—TORTS. A study of conversion, negligence, duties of land-owners, hazardous occupations, deceit, defamation, etc. Text, Bigelow on Torts. Professor Higgins.

III.—BILLS AND NOTES. The formal requirements, interpretation and construction, negotiability, consideration, negotiation, liability of parties, dishonor, discharge, acceptance, checks, notes, and bills of exchange. Text, Norton on Bills and Notes. Professor Green.

IV.—AGENCY. Who is a competent principal and who is a competent agent, formation of the relation, authority, rights, duties and liabilities of the several parties, principal, agent, and third party, and various classes of agents. Text, Huffcut on Agency. Professor Higgins.

Any two of the above may be taken by the student, upon satisfying the instructor of his preparation to undertake the work. It is intended, however, that those who wish to complete the course in the School of Law in two Summer and two regular sessions shall study criminal law and torts in the first Summer Session and agency and bills and notes in the second Summer Session. During the regular sessions the student will pursue the course of study in an order which will be made known to him upon application.

MATHEMATICS.

I (=2).—COLLEGE ALGEBRA. Three hours credit. 7:30 to 9. Rapid review of exponents, radicals, and quadratic equations; graphical representation; complex numbers; logarithms; determinants; theory of equations; numerical equations of higher degree. Text-book: Hawkes's *Advanced Algebra*. Associate Professor Van der Vries.

II (=4).—ANALYTIC GEOMETRY I. Two hours credit. 9 to 10. The straight line and circle; loci problems; Ashton's *Analytic Geometry*. Open to all students who have completed courses 2 (college algebra) and 3 (plane trigonometry). Associate Professor Van der Vries.

III (=5).—CALCULUS I. Three hours credit. 7:30 to 9. Differential calculus; fundamental principles; derivatives; applications to geometry and mechanics: maxima and minima; indeterminates; series. Granville's *Calculus*. Open to students who have completed or are taking course II. Professor Miller.

A TEACHERS' COURSE IN MATHEMATICS.

The last few years have witnessed a remarkable revival in this country and abroad of interest in the teaching of mathematics and in the question of its proper place in the curriculum of the schools. In all sections of the country teachers' associations and other interested people are eagerly discussing questions of mathematical reform in the grammar grades and high school. Special organizations have been formed in many parts of the country to deal with these questions, and a special journal has been founded to furnish a suitable forum for such discussions.

There is already a wide-spread interest in this movement among Kansas teachers, and many of them are desirous of knowing for themselves more of the relative merits and demerits of the present system as well as the character and extent of the proposed changes. To meet the wants of this large body of teachers the following course is offered at the Summer Session:

IV (=18).—TEACHERS' COURSE IN MATHEMATICS. Two hours credit. 10:15 to 11:15. This course is designed for teachers, and students who are preparing to become teachers, of mathematics. It embraces the history, pedagogy and mutual relations of the mathematical subjects usually taught in the public schools from the beginning of the seventh grade to the end of the high-school course. The course consists of (1) history of mathematics, reading, and lectures; (2) a comparative study of the mathematical curricula of the schools of this country and of Europe; (3) a consideration of the best order of taking up the different subjects; and (4) the best methods of teaching the different topics. Open to any one who is a graduate of an accredited high school or has an equivalent preparation. Professor Miller.

MUSIC.

The department of music will offer courses in piano under Professor Skilton and assistants, in organ and theory under Professor Skilton, in voice under Professor Hubach and assistants, in violin under Miss Phipps, and in violoncello under Mr. Buch, thus presenting as wide a field of study as the regular course.

ORGAN. The course in organ is especially designed for pianists who wish to qualify themselves in a short time to fill a church po-

sition; also for those who wish to begin a thorough study of the instrument. The three-manual electric organ in Fraser Hall and several two-manual organs in city churches are available for practice. Professor Skilton will give weekly recitals.

PIANO. The course in piano offers an opportunity to three classes of students: To teachers who wish to improve their own playing, add to their repertoire, and increase their knowledge of teaching methods; to students who wish to complete their preparation for the Fine Arts School, or for some particular year, especially to high-school students who are too busy to give much time to music during the school year; and to those who study music as a source of general culture and to gratify personal tastes.

VOICE. The course in voice is valuable to teachers who wish to study methods of tone placing and voice production and add to their list of teaching material; also to church singers who desire to enlarge their repertoire and study different forms of service. Experienced singers may possibly find temporary church positions in the city. Recitals will be given by Professor Hubach.

VIOLIN AND VIOLONCELLO. This is the first year that an opportunity to study these instruments has been offered during the summer. Advanced pupils will find this an excellent chance to develop careful habits of practice and lay out a course of further study. They will be given opportunities for practicing trios and quartets. Recitals of chamber music will be given.

THEORY. Courses in harmony, counterpoint and composition are offered. Students who enter the Freshman class in February often finish the year's work in the Summer Session and continue with the Sophomore class in the fall. There is also a beginning class. Classes meet three hours a week.

ENSEMBLE CLASS. Once a week a class will meet in which piano students may have the opportunity of playing trios and quartets with stringed instruments.

FEEES.

Students in music do not pay the regular Summer Session fee, but according to the following schedule:

Private lessons with Professor Skilton or Professor Hubach:

One lesson a week.....	\$10 00
Two lessons a week.....	18 00

Private lessons in violin or violoncello:

One lesson a week.....	\$8 00
Two lessons a week.....	15 00
Theory class, three hours a week.....	10 00
Ensemble class, one hour a week.....	2 00

Private lessons with assistants in piano:

One lesson a week.....	\$4 50
Two lessons a week	9 00

Private lessons with assistant in voice:

One lesson a week.....	\$6 00
Two lessons a week	12 00

No charge is made for the use of the University organ. Organs in city churches may be used at the rate of one dollar a week for an hour of daily practice. Pianos may be rented at private houses or of the music dealers. The University does not furnish pianos for practice.

PHARMACY.

Neither course will be given unless the total number of students electing both is at least six.

I (=6 and 11).—PHARMACEUTICAL TESTING AND DRUG ANALYSIS. Five hours credit. Five hours a day, six days a week. This course is designed to meet the requirements of those interested in the standardization of drugs and medicines, according to pharmacopœial methods and consistent with the food and drug law. It consists of practical demonstrations and detail work in the detection of adulteration in medicinal chemicals; the separation of alkaloidal and glucosidal principles of vegetable drugs, and their estimation and identification, by physical and chemical means. This course embodies the work of courses 6 and 11, as required for graduation in the regular three-years course in the School of Pharmacy. Assistant Professor Emerson.

II (=8).—PHYSIOLOGICAL AND MEDICAL CHEMISTRY. Five hours credit. Five hours a day, six days a week. Open to students in the School of Medicine, the School of Pharmacy, and the College. Products of physiological interest are separated from animal tissues and organs and studied in detail. Special attention is given to the study of carbohydrates, proteins, and the normal and abnormal products of animal life. The second part of the course consists of urinalysis, embracing lectures, recitations, and work in both chemical and microscopical laboratories. Assistant Professor Emerson.

PHYSICAL EDUCATION.

I (nearly =6).—TEACHERS' COURSE. Two hours credit. 11:15 to 12:15. Designed for those who wish to conduct classes in schools or colleges. Drills in the different forms of calisthenics and light apparatus will be studied and opportunity will be given for practice in teaching. Hygienic exercises on the heavy apparatus will be

given to suit the individual cases. Preparation of classes for exhibition or class-day exercises. This course will be regarded as a duplicate of 6. Professor Naismith.

II (nearly = 8).—GAMES FOR SCHOOL CHILDREN. Two hours credit. 2 to 3. This course is designed to give the teacher a knowledge of the games suitable for the school yard. This will include a study of the game, its purpose, its effects, its rules, methods of teaching, and its dangers. This course will be regarded as a duplicate of 8. Professor Naismith.

The gymnasium will be open at all times, when there is not a class in session, for the use of those who wish to use it for recreative purposes or for individual development. Physical examinations will be given and exercises prescribed for those who need special corrective work. The athletic fields will be used for such games as baseball, lacrosse, golf, tennis, and hockey. Indoor games, such as hand-ball, volley-ball and basket-ball, will be played in the gymnasium at stated hours.

PHYSICAL GEOGRAPHY.

(See Geology.)

PHYSICS.

I (nearly = 3 and 4).—GENERAL COURSE IN PHYSICS. Two hours credit or none. 8 to 9. The course consists of lectures and experimental demonstrations covering the more fundamental principles of physics. Prerequisite: Some knowledge of plane trigonometry and a year's course in high-school physics. For duplication, see note below. Professor Hill.

II (nearly = 5 and 6).—LABORATORY COURSE IN GENERAL PHYSICS. Three hours credit or none. Fifteen hours per week, five of which will be from 9 to 10; the others by arrangement. The work includes demonstration experiments as well as quantitative measurements. Prerequisite: This course can be taken only by those who are taking course I. For duplication, see note below. Professor Hill.

III.—Work in advanced subjects may be arranged for by students desiring it, but only by correspondence or personal consultation with the instructor.

Courses I and II are intended especially for high-school teachers. Assistance in the making or purchasing of laboratory apparatus and in the methods of teaching physics will be given to any who may desire it.

Courses I and II are briefer than the corresponding regular courses, 3 and 4, and 5 and 6, respectively. Students who have

taken course I can do the work of courses 3 and 4 more easily, and thus complete a six-hour credit. Students who have taken course II can do the remaining work of courses 5 and 6, and thus secure the credit given for those courses.

PHYSIOLOGY.

None of the classes in physiology will be given unless the total number of students electing work in the department amounts to at least six who are carrying five-hour courses.

I (in part = 1).—Two hours credit. Ten hours a week. Hours by arrangement. Lectures, demonstrations, recitations, and laboratory work. A brief course in physiology, designed for pharmacy and college students, and to be introductory to domestic science. Professor Hyde.

II (= 2).—Five hours credit. Daily, 8 to 12:15. Lectures, demonstrations, recitations, and laboratory work. A general course in physiology, designed especially for those who intend to teach or specialize in the sciences. Open to students of the College who have had chemistry. Professor Hyde.

III (= 6). Five hours credit. Daily, 8 to 12:15. For Graduates and advanced undergraduates. Investigation of special physiological problems. Professor Hyde.

PSYCHOLOGY.

I (nearly = 1). ELEMENTS OF PSYCHOLOGY. Two hours credit. 9 to 10. This course will cover the general field of mental processes and their laws. Without such a knowledge there can be no intelligent study of the problems of education. Special attention will be paid to the educational bearing of the course. Some experimental illustrations will be introduced. Lectures and library work. The course will be regarded as a duplicate of 1. Professor Boodin.

II.—ADVANCED PSYCHOLOGY. Two hours credit. 10:15 to 11:15. This course will consist of a more thorough study of some special problems in psychology, and may be taken in connection with I by mature students. It will take up for special study and reports such problems as the relation of psychology to education, the psychology of the crowd, hypnotism, telepathy and spiritualism, and insanity. The aim of the course will be to make possible an intelligent attitude towards psychological problems which are of current interest and which the teacher ought to know about. Lectures and reports. Open to advanced undergraduates and to Graduates. Professor Boodin.

PUBLIC SPEAKING AND DEBATE.

I (nearly=1).—PUBLIC SPEAKING IN THE HIGH SCHOOL. Two hours credit. 8 to 9. This course conforms in general outline to public speaking 1, a beginning course for Freshmen and Sophomores, and will be regarded as a duplicate of that course. This course will be offered both as a practical and a theoretical training in the principles of public speaking, in which emphasis will be given to the actual teaching of the subject in the high schools. Associate Professor Frazier.

II (nearly=6).—READING ALOUD. Two hours credit. 9 to 10. A course designed as an aid to the teacher of reading in primary and secondary schools. A brief review of past elocutionary methods for the purpose of comparison with the more modern system of teaching. Methods for creating an interest in reading and suggestions for training the pupil to read intelligently and with feeling. This course will be regarded as a duplicate of 6. Associate Professor Frazier.

SHOP WORK.

The shops will be open from 7 to 12 six days in the week, and from 1 to 6 five days in the week, throughout the session. The total number of hours required in each course is seventy-eight. Students will arrange their hours for work by conference with the instructor. Each course gives two and one-half hours of credit in the School of Engineering, but will be counted as a two-hour course for purposes of registration. That is, a student may enroll for three courses in shop work and for nothing else, or for two courses in shop work and one two-hour course in some other subject, or for one course in shop work and three or four hours in other subjects.

Courses 3 to 6 will not be given unless the total number of students in these courses reaches at least six.

1.—Forging, welding and working iron at proper heat. Making steel tools, and tempering. Mr. Hanson.

2.—Use of hand wood tools; sharpening; the lathe and pattern-turning; pattern-making, core-boxes, draft, shrinkage, finish, etc.; selection of woods; exercises and working from special designs. Special work in manual training can be substituted for a part of this work by those who are not engineering students. Mr. Jones.

3.—Filing, chipping, scraping, drilling, babbitting, and thread-cutting. Mr. Ward.

4.—Lathe work. Turning cylinders, tapers, curves, and cutting threads. Mr. Ward.

5.—Lathe work. Turning to close fit; eccentric and special thread-cutting. Mr. Ward.

6.—Lathe, planer and milling-machine work. Boring, reaming and shaping to special design. Tool-making, hardening, and grinding. Mr. Ward.

SOCIOLOGY AND ECONOMICS.

I (nearly = 1).—ELEMENTS OF SOCIOLOGY. Two hours credit. 8 to 9. A general course in sociology treating of foundation principles. The principal topics are social evolution, socialization and social control, social ideas and social pathology. Its aim is to present briefly the origin, growth, structure and activities of society. It considers social forces, social laws, and the present problems of society. The course is intended for those who wish to have a general knowledge of the subject and to lay the foundation for future study. It is especially helpful to teachers in acquainting them with the social life for which they are preparing students to enter and become a part. This may be taken for graduate credit by doing extra work outlined by the instructor. Lectures and library work. This course will be regarded as a duplicate of sociology 1. Blackmar's text, *The Elements of Sociology*, will be used as a guide. Professor Blackmar.

II (in part = 1).—THE ELEMENTS OF ECONOMICS. 9 to 10. Two hours credit. A general course in the principles of economics. The principles and methods of production, distribution and consumption of wealth will comprise the principal line of study. Special stress will be laid upon modern consumption and distribution. The subject of distribution will be extended to include the discussion of labor organizations, cooperation, profit-sharing, and trusts, while the course will deal with the fundamental principles of economics. Much care will be taken to apply these to the modern problems of the economic life. Also, in the progress of the course, special attention will be given to methods of teaching economics. Lectures and library work. This course will be regarded as a duplicate of the first part of economics 1. Blackmar's text on economics will be used as a guide. Professor Blackmar.

III.—SPECIAL RESEARCH COURSE. By appointment. Five hours credit. For advanced graduate work in sociology and economics. Before enrolling in this course, students should consult the instructor. Professor Blackmar.

ZOÖLOGY.

I.—METHODS IN BIOLOGICAL INSTRUCTION. Three hours credit. 3 to 5. Designed especially for teachers and prospective teachers of biology in high schools. What shall the year of biology in the high schools be? and how can it be carried on to best advantage? These are fundamentally the questions which this course is intended to answer. In the majority of high schools the teacher of biology has still to teach other subjects. Frequently he is teaching biology from the exigencies of the situation, and not from choice or preparation. This course in biological methods will be helpful to such teachers. It is planned to benefit teachers also who have had their college training in biology and are now concerned in improving their high-school course.

The subjects discussed in this course will be: What lines of work are of most worth in elementary biological instruction? How to obtain and prepare materials for study, in plenty, and when they are most needed; the equipment of the high-school laboratory; the balance between laboratory, field and book work; what the pupil's laboratory book should be, illustrated by laboratory books from different schools; the value of physiological experiments in an elementary course; the preparation of microscope slides, lantern slides, photographs, and charts; biological books for the high-school library; the recommended courses of the North Central Association of Colleges and Secondary Schools, and of the American Societies of Zoölogists and Botanists. Professor McClung and Professor Stevens.

II (in part=1).—ELEMENTARY ZOÖLOGY. Three hours credit. Fifteen hours a week, five of which will be 9 to 10; the others by arrangement. A course in the general principles of zoölogy, consisting of the laboratory study of type specimens; lectures and recitations upon classification, habits, distribution, etc., and field-work. Professor McClung.

III (in part=1).—ELEMENTARY ZOÖLOGY. Two hours credit. Ten hours a week, five of which will be 9 to 10; the others by arrangement. A course similar to I, but dealing with the lower invertebrates principally. It may be combined with course I to secure a five-hour credit. Professor McClung.

Of the two following courses, only one can be given:

IV (=6).—CYTOLOGY, OR CELLULAR BIOLOGY. Five hours credit. 7 to 12:15. A course in cell development and inheritance. There will be taught microscopical methods, the general principles of cell structure, and the relation between germ-cell phenomena

and theories of heredity. Open to students with a preparation in general zoölogy equivalent to twenty hours work. Undergraduate or graduate credit. Professor McClung.

IV (=7).—EMBRYOLOGY. Five hours credit. 7 to 12:15. The ontogeny of the chick, shark, etc. Open to students with a preparation in general zoölogy equivalent to twenty hours work. Undergraduate or graduate credit. Professor McClung.

V.—Opportunities will be offered graduate students to carry on advanced work in lines for which they are prepared and for which the department is equipped; but specific courses cannot be counted on except after correspondence.

PART IV.

INSTITUTIONS CONNECTED WITH
THE UNIVERSITY AND UN-
DER ITS CONTROL.

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IX. THE LIBRARIES.

CARRIE M. WATSON, Librarian.

EDITH M. CLARKE, Cataloguer.

CLARA S. GILLHAM, Loan Desk Assistant.

MARY M. SMELSER, Accession Assistant.

DORA C. RENN, Reference Assistant.

KATE E. DINSMOOR, Reference Assistant.

PAULINE MADDEN, Reference Assistant.

The libraries of the University contain 55,000 volumes and 36,000 pamphlets. These numbers are increasing as rapidly as funds will permit. An annual appropriation of \$8000 is devoted to the purchase of books, and about 4000 books and 2000 pamphlets will be added during the year 1907-'08. The books are selected with the greatest care, and the endeavor is made to furnish the students the latest and best authorities in the various departments. The library is sufficiently large to enable the student to prosecute research and to furnish him substantial aid in his investigations. Source material in American and European history and in other subjects is being constantly collected, and affords in some lines all necessary material for advanced original work.

THE UNIVERSITY LIBRARY.

The University library is in the Spooner Library Building, and is open every day in the year excepting Sundays and holidays. Library hours are from eight A. M. to six P. M.; Saturdays, from eight A. M. to 12 M. The reading-room is open from seven P. M. to ten P. M. when the University is in session. Liberal facilities for using the library are offered to all members of the University. All books, except reference books and books too rare to be easily replaced, may be taken from the library by the students for three weeks. However, if a book is needed for a special purpose or a class reservation, it may be recalled by the Librarian, and must be returned at once after notice is received.

BOOK-STACKS. There are five stories in the stack-room of the library, each eight feet high, making all the books within easy reach. The stacks and the flooring of these rooms are of steel,

thereby making a perfectly fire-proof depository for the books. Books are classified and arranged on the shelves in the stack-room by the Dewey system of classification.

CATALOGUE. The catalogue of the library contains about 60,000 cards. It is arranged alphabetically both as to author and subject, and the author and subject cards are catalogued together. The cards are arranged in classes in the general reading-room, making them entirely accessible to both instructors and students.

THE GENERAL READING-ROOM. The general reading-room is a large, comfortable, well-equipped and unusually well-lighted room, on the main floor of the Spooner Library. It is furnished with 200 electric lamps. In this room are about 1000 volumes of general reference books, cyclopedias, dictionaries, and Poole's Index to Periodical Literature, and other books which are of special value to students for reference purposes.

DEPARTMENTAL READING-ROOMS. The departments of German, philosophy, Latin, English and mathematics have reading-rooms on the lower floor of the library, and the departments of American and European history, sociology and economics have the whole of the upper floor of the building.

PERIODICAL ROOM. The University provides in this room 624 periodicals and learned-society publications and 158 state newspapers, all of which are at the service of instructors and students. The list of periodicals is very large, and includes almost all of the important publications of America and Europe.

OFFICES, ETC. Offices for the Librarian and cataloguer and the accession-room adjoin the general reading-room, and on the lower floor are storerooms, etc.

DEPARTMENT LIBRARIES. Besides the books in Spooner Library Building, there are eleven departmental libraries in the different buildings of the University. They are placed in close conjunction with the various laboratories and lecture-rooms, so as to be immediately accessible to students engaged in scientific work.

THE LAW LIBRARY. The law library is located in Green Hall. It contains upwards of 3000 volumes.

THE LAWRENCE PUBLIC LIBRARY.

The public library of Lawrence is accessible to students. A new Carnegie building has been erected and is now occupied. This library now contains about 7000 volumes, mainly of general literature and fiction, and, therefore, supplements the University library in that direction.

X. THE GYMNASIUM.

DR. JAMES NAISMITH, Director.

Assistant Professor FISH.

W. C. LANSDON.

J. P. HAGERMAN.

The Robinson Gymnasium, erected in 1907 at a cost of \$100,000, is the most modern and efficient gymnasium west of Chicago. The three floors are equipped to accommodate the greatest number of students with the greatest variety of exercises. The basement floor has a locker-room with special apartments for the various athletic teams, a system of shower baths, a swimming pool and baseball cage. The first floor is equipped throughout with the most modern apparatus for general and special exercises. This will be available at all hours of the day. The second floor will be used for all forms of athletic development, and for the various indoor games. In the gallery of this floor is an eighteen-lap track, upon which the greatest speed may be obtained with the least effort. Special rooms are equipped for fencing, boxing, wrestling, and handball.

The gymnasium is designed to benefit all students of the University, not only by giving an opportunity for general exercise and healthy recreation, but also by providing means of caring for the body, correcting faulty attitudes and functions, developing skill, physical judgment, and self-control. It provides, therefore, for specific training in view of any physical defects that may be remedied by proper care.

The department is under the supervision of a director who is himself a trained physician. He gives courses in physical education in the College designed especially for those who intend to teach. Associated with him are specialists in the various athletic sports.

EXAMINATIONS.

A thorough physical examination and measurement is offered each student and a record of results is kept as a basis for advice for exercise. The results are platted on charts, so that the student may compare himself with others and note the progress he is

making. Those taking work in the gymnasium or on the athletic field must pass a satisfactory examination on entering the sport. At any time that the health of the student demands it, he is debarred from taking part in any form of exercise that may injure him.

The director's office is equipped with apparatus for taking measurements and for making tests of health, skill, and strength.

The gymnasium is open from ten A. M. to six P. M. each day excepting Sundays.

McCOOK FIELD.

McCook Field, the gift of Col. John J. McCook, is situated only a short distance from the University and gives opportunity for all forms of outdoor athletics and sports. It contains a baseball diamond, a football field, a running-track, and facilities for field athletics. A grand stand and bleachers accommodate the spectators.

XI. THE MUSEUMS.

FRANK STRONG, PH. D., *ex officio* Director of the Museums.

FRANCIS H. SNOW, PH. D., LL. D., Curator of the Entomological Collections.

LEWIS L. DYCHE, A. M., M. S., Curator of the Mammals, Birds, and Fishes.

CLARENCE E. MCCLUNG, PH. D., Curator of the Vertebrate Paleontological Collections.

ERASMUS HAWORTH, PH. D., Curator of the Geological and Mineralogical Collections.

WILLIAM C. STEVENS, M. S., Curator of the Herbarium.

ALEXANDER M. WILCOX, PH. D., Curator of the Classical Museum.

HANDEL T. MARTIN, Assistant Curator of Paleontology.

CHARLES D. BUNKER, Assistant Curator of Mammals, Birds and Fishes.

The museums of the University are extensive and valuable. The collections were begun thirty-six years ago by Dr. Francis H. Snow, and have been obtained chiefly during the past thirty years by University exploring parties in western Kansas, Colorado, Wyoming, Arizona, New Mexico, Texas, Oregon, British America, Alaska, Greenland, and South America. The expeditions have been mainly under the direction of Dr. Francis H. Snow, Dr. Samuel W. Williston, Dr. C. E. McClung, and Prof. Lewis L. Dyche. By means of the material thus accumulated, a system of exchange has been established with leading institutions and naturalists in all parts of the United States, so that the cabinets contain a very satisfactory representation of the plants, insects, mammals, birds, minerals, and fossils, not only of the state of Kansas, but also the whole of North America. The collections are nearly all housed in the Museum of Natural History, completed in 1903 at a cost of \$75,000.

In the summer of 1906 Dr. F. H. Snow conducted his 25th expedition for the collection of insects for the museum of entomology, to the Baboquivari Mountains, in Pima county, Arizona. Many new species were taken.

During the summer of 1905 the zoölogy department conducted an exploration of the John Day region of central Oregon for the

purpose of obtaining vertebrate fossils peculiar to this Miocene area. The party, under the direction of Doctor McClung, consisted of Messrs. H. T. Martin, W. J. Baumgartner, and Roy Hoskins. The result of the expedition was to add materially to the mammalian fossils now in the collections. A representative series of Eocene leaves was also secured.

In the summer of 1904 Doctor McClung, with a party of five, made extensive additions to the Cretaceous vertebrate material in the museum by collections from western Kansas.

In the same year Mr. H. T. Martin, assistant curator of vertebrate paleontology, secured a notable series of mammalian fossils during a season's collecting in the Santa Cruz beds of Patagonia.

Additions to the herbarium have been made by expeditions under the direction of Doctor Barber from Maine, the Ozark region of Missouri and Arkansas, North Dakota, Oregon, Washington and western Canada.

ENTOMOLOGY.

The entomological collection is the largest connected with any educational institution in the United States. It contains 21,000 species and 250,000 specimens, representing all the different orders of insects. Nearly the whole of this material has been obtained by the expeditions conducted by the head of the department of systematic entomology during the summer vacations of the past thirty years, supplemented by a system of exchanges with collectors and museums in all parts of the world. The orders of Lepidoptera, Coleoptera and Diptera are especially well represented. Among the Lepidoptera there are nearly 100 "types" of species described by Grote and Henry Edwards; among the Diptera there are nearly 600 "types" of species described by Williston, Townsend, W. A. Snow, Aldrich, Adams, Day, Whitney, and Brown; and among the Hymenoptera 300 "types" described by Viereck.

The cabinet of Coleoptera contains 8100 North American species and 2000 European and exotic forms, and the Lepidoptera and Diptera include more than 3000 species of each order.

The instruction in this department has special reference to the discrimination of the beneficial from the injurious species, and the extensive collections are of practical value to the agricultural and horticultural interests of the state as well as to the students of the University in the determination of the names and habits of our insect friends and foes.

There is no other university in the country where the advanced student of systematic entomology can find ready access to such an abundance of material for the prosecution of his researches. The

collection occupies part of the second and third floors of the Museum of Natural History.

ZOÖLOGY.

The collection of large mammals indigenous to the North American continent is one of the most complete in the world. The specimens include the more common and well-known animals of the United States, an excellent representation of the animals of the Atlantic coast as far north as Cape Sabine and from the continent of Greenland. Also a series from the Pacific coast as far north as the Aleutian islands and from the interior of Alaska. This large collection is being placed on exhibition on the second floor of the Museum of Natural History, by Prof. L. L. Dyche and his assistants. The collection will occupy the entire floor, which will be known as "Mammal Hall." New material is constantly being added, and mounted for study and exhibition.

Many thousands of specimens in the shape of skins, skeletons, and skulls, packed away for years in drawers and cases for the want of space for proper exhibition, are now being placed on exhibition in the Museum of Natural History. These are available for students in zoölogy and comparative anatomy, and are used by instructors to illustrate their various lectures.

In the ornithological collections there are between 3000 and 4000 specimens, most of which are carefully protected in moth-proof cases. Many of these are unmounted skins, furnishing ample material for laboratory study when fresh specimens cannot be readily obtained. There is also a fine series of skeletons, representing species in size from the shrews and bats to elephants and whales. These specimens are of great value to students in osteology and paleontology.

An alcoholic collection of marine radiates, mollusks and articulates from the Atlantic and Pacific coasts affords to the zoölogical students the means of investigating the anatomical structure of the leading forms in all the great types of the animal kingdom.

In the conchological cabinet are included nearly 1000 species of shells, from all parts of the world.

Recently extensive additions to the invertebrate collections have been made by expeditions to Bermuda and to the northern Atlantic coast. While specimens from all the branches were collected, special attention was directed toward the Porifera, Coelenterata, and Echinodermata. The teaching museum is now well supplied with representative specimens of all the invertebrate orders.

PALEONTOLOGY.

The collections in paleontology offer the best facilities not only for instruction in general stratigraphic geology, but also for special advanced work in systematic paleontology. The collections of invertebrates include about 2000 species, distributed among about 500 genera. They represent all of the principal geological formations, but are especially rich in Kansas forms. The numbers of genera and species from the chief geologic groups are nearly as follows:

- Tertiary, 80 genera, 200 species.
- Cretaceous, 80 genera, 200 species.
- Jurassic, 10 genera, 30 species.
- Triassic, 25 genera, 75 species.
- Permo-carboniferous, 60 genera, 750 species.
- Devonian, 80 genera, 300 species.
- Silurian, 75 genera, 250 species.
- Ordovician, 90 genera, 250 species.
- Cambrian, 20 genera, 30 species.

The collection of fossil vertebrates, with but a few exceptions, is the most extensive in America, and in the Cretaceous forms is unequalled elsewhere. From the Miocene Tertiary of Kansas, Wyoming and South Dakota nearly all the known genera are represented. The Cretaceous animals are represented by many hundreds of specimens, including not a few of exceptional perfection and completeness. The mosasaurs include five genera and twelve or fifteen species, showing in most of them the complete anatomy. Of fossil birds, the best specimens known are in the museum, and some of the specimens of pterodactyls and plesiosaurs are unequalled in any other collection. Nearly all genera of the Cretaceous fishes are represented, and, in some cases, by exceptional specimens. A creditable series of turtles, including a number of type specimens, is contained in the collection. From the Laramie Cretaceous, the most notable specimen is a mounted skull of the gigantic dinosaur, *Triceratops*. From the Permian and Carboniferous there are also a number of valuable specimens. All together, about 400 species of extinct vertebrates are represented in the museum.

Valuable additions are constantly being made to the collections, both of invertebrates and vertebrates, chiefly by field expeditions. Perhaps the most important of these is a new species of plesiosaur, which has been thoroughly restored and mounted as an entire skeleton. It is without doubt the finest specimen extant. During the present year there has also been added a remarkably fine free mount of an entire skeleton of the extinct *Bison occidentalis*.

This unique specimen was collected and mounted by Mr. Martin, and is the most finished preparation in the museum. A half relief mount of the giant Cretaceous fish *Xiphactinus audax* is another important achievement of the year. By exchange with the American Museum of Natural History, New York, a series of casts showing the evolution of the horse has been secured. All the collections have been gone over and a card catalogue prepared, so that reference to the specimens is much easier. In order to render the collections as interesting and profitable as possible the specimens have been supplied with descriptive labels and a synoptic, or index, case has been placed at the entrance to the paleontology rooms. The collection occupies the most of the upper floor of the Museum of Natural History.

PALEOBOTANY.

The collection in paleobotany is especially rich and valuable, representing thousands of specimens. The Dakota and Comanche Cretaceous series are the most extensive, and include many types of species and undescribed forms. In addition to the collection of Tertiary plants, there is a very large and valuable series of Carboniferous plants from Kansas, including many new forms yet unknown to science. The collection is placed with that of paleontology. The purchase of a number of cases has made it possible to put on exhibition many more specimens than have before been open for public inspection.

THE HERBARIUM.

The herbarium includes about 7500 specimens, identified and labeled, of flowering plants, besides much material partly identified. The flora of the western Rocky Mountains is especially well represented. There is also a considerable amount of cryptogamic material, including sets of economic fungi of North America and of North American lichens. The herbarium is housed in Snow Hall. Besides these specimens much of the recent material has not yet been recorded.

GEOLOGICAL COLLECTIONS.

The museum of economic geology and physical geology contains many hundred specimens. In economic geology there is a large collection of ores of various kinds, especially chosen to represent, first, the character of the ores, and second, the mode of ore formations. Specimens of almost all kinds of ores and other economic products, such as gypsum, coal, oil, etc., are included and arranged in accordance with the two ideas: first, of economic value, and

second, of origin or formation. Specially to be mentioned in this connection is a very complete collection of lead and zinc ores and associated minerals from the Galena-Joplin district, which is the greatest field for mining zinc ore known in the world.

The petrographic collection contains about 2000 specimens of crystalline rocks from all parts of the world, including the largest collection ever made of granites, porphyrites and basic dike rocks, from the area of crystalline rocks in Missouri. There is also a large and specially selected collection of crystalline rocks from New Hampshire, and another collection from the Lake Superior region.

The mineralogical collection is divided into two groups: first, a working collection for students in the mineralogical laboratory, and second, an exhibitiv collection for the museum. The former contains fair specimens and material for use in the laboratory, but representing all the leading classes of minerals, while the latter contains more pretentious and showy specimens, more generally interesting to the public.

THE CLASSICAL MUSEUM.

The classical museum contains full-sized plaster casts of the Hermes and Satyr of Praxiteles, the Venus of Melos, the so-called Theseus of the Parthenon, three Metopes and fifty-five feet of the frieze of the Parthenon, Varvakeion and Lenormant statuettes, and the Strangford shield, Athena Parthenos, the Hegeso tombstone, the Opheus relief, the Satyr and Mænad relief, the Borghese Warrior, Augustus in military dress, the so-called Germanicus, nineteen busts of Greek sculpture, and Greek and Roman authors and emperors, two Tanagra figurines, and the Nike of Paionios inscription.

Models of the Acropolis of Athens, the east pediment of the Zeus temple at Olympia, the Victories of Paionios and Samothrace, and the Vatican Amazon.

Relief maps of Athens and Rome.

Laloux's restorations of Olympia, Defrasse's restorations of Epidaurus, Pontremoli's restoration of the Pergamon, and Weichardt's restoration of Pompeii.

Stuart and Revett's *Antiquities of Athens*, 363 plates; Penrose's *Athenian Architecture*, 47 plates; Inwood's *Erechtheum*, 39 plates; Bohn's *Propylæa*, 21 plates; Ross, Schaubert and Hansen's *Athena Nike Temple*, 13 plates; Michaelis's *Parthenon*, 15 plates; Cockerell's *Temples of Ægina and Bassæ*, 37 plates; Koldewey and Puchstein's *Temples of Lower Italy and Sicily*, 29 plates; Major's *Temples of Pæstum*, 25 plates; Adler's *Mausoleum*, 5 plates; Le Roy's *Ruins of the most beautiful monuments of Greece*, 60 plates; Fenger's

eight colored plates of Doric architecture; the plates of the final reports of the excavations at Assos and Delphi, as far as they have yet been published; Piranesi's large engravings of the columns of Trajan and Marcus Aurelius; twelve photographs of architectural models in the Metropolitan Museum, New York.

A complete set (560 so far) of Brunn's plates of Greek and Roman sculpture; 55 Braun photographs of the Elgin marbles; 139 plates of the Sabouroff collection of sculpture, terra-cottas, vases, and bronzes; Furtwaengler's ancient gems, 67 plates; 82 plates of the silver vases and utensils found at Hildesheim and Boscoreale; 6 colored plates of Odyssey paintings found in Rome, Dodwell's; 30 views of Greece, in color; Lau's and Genick's 84 colored plates of Greek vases; 27 colored plates of Greek vases in the British Museum; Furtwaengler and Loeschke's Mycenæan vases, 49 plates; Harrison and MacColl's Greek vases, 43 plates; Furtwaengler and Reichhold's large plates of Greek vases, as far as they have been published, 50; 11 colored plates of Greek and Etruscan terra-cotta sarcophagi in the British Museum; Preller's four cartoons of wall-paintings of ancient Greek landscapes in the Albertinum, at Dresden; 39 plates of Monumenti Inediti and Antike Denmæler vases, sculpture, and architecture; 650 photographs illustrating Roman topography and life.

A *facsimile* of the whole of the Bacchylides manuscript; 36 plates of other Greek manuscripts; 25 *facsimiles* of Biblical manuscripts in the British Museum; 30 *facsimiles* of the Flinders Petrie Egyptian Greek papyri; 62 plates of Latin manuscripts; Roehl's collection of oldest Greek manuscripts, many of them in *facsimile*.

Baumeister's monuments of classical antiquity, 95 plates and 2400 illustrations; 1800 stereoptican slides of Greek and Roman views, portraits, buildings, statues, paintings, vases, and manuscripts. •

The classical museum is located in Fraser Hall, south wing, second floor.

XII. UNIVERSITY GEOLOGICAL SURVEY OF KANSAS.

FRANK STRONG, PH. D., Director, *ex officio*.

ERASMUS HAWORTH, PH. D., Superintendent and Geologist.

EDGAR H. S. BAILEY, PH. D., Chemist.

As explained below, the Geological Survey is work undertaken for the good of the state without compensation to members of the Faculty. It is state work, and should be done by a state institution, and without cost to the state other than necessary expenses. The department of geology and mining, through its head, who is also superintendent of the Survey and state geologist, works through and in conjunction with the Survey to develop as largely as possible the mineral resources of the state. The results already have been of very great value to the state, especially in the development of coal, oil, gas, Portland cement, gypsum and its products, clay manufactures, etc.

The University Geological Survey of Kansas was organized by the Board of Regents of the University in 1894, under authority conferred by legislative act, and is supported by direct legislative appropriations. The object of the organization is to accomplish a geological survey of the state as rapidly as possible—a survey giving a complete exposition of the geological and mineralogical resources of the state, including all subjects of economic and scientific importance.

It is contemplated that the work will be done by members of the University Faculty and advanced students, so that the cost to the state will be a minimum. The Faculty of the College recognizes such student work by giving credit for it, the same as for work done in the classrooms and laboratories of the University.

Work was first begun on the Survey in the summer of 1893, and has been carried forward steadily ever since. During that summer the department of physical geology had three assistants doing field-work; in 1894, four; in 1895, twelve; in 1896, twelve; in 1897, seven; in 1898, five; in 1899, five; in 1900, four; in 1901, five; and in 1902, five. The subjects thus far investigated are: The general stratig-

raphy of the entire state; the coal-fields; salt; gypsum—on all of which special reports have been published. In addition, much work has been done in the investigation of the lead and zinc ore deposits of the state, and a report on the same is nearing completion. A large amount of work has also been done in investigating the oil and gas territory in the southeastern part of the state, but at least one more summer must be devoted to field-work along this line before a report can be prepared.

The department of paleontology of the University has likewise done a large amount of work investigating the fossil fauna and flora of the state, and has published two reports on the subject.

The department of chemistry has made an investigation of the mineral waters of the state, and has published a report on the subject.

The Survey has already published the following reports, all of which are for free distribution, the recipient paying transportation charges. (Those marked with a star are out of print.)

Volume	I, 1896—Reconnaissance Report on General Stratigraphy of Eastern Kansas.*	
Volume	II, 1897—General Geology of Western Kansas.*	
Volume	III, 1898—Special Report on Coal.....	28 cents.
Volume	IV, 1898—On Upper Cretaceous Paleontology.*	
Volume	V, 1899—Special Report on Gypsum and Gypsum Cement Plasters.....	16 cents.
Volume	VI, 1900—Carboniferous Invertebrates and Cretaceous Fishes.....	28 “
Volume	VII, 1902—Mineral Waters.....	20 “
Volume	VIII, 1906—Special Report on Lead and Zinc	28 “
	Report on Mineral Resources of Kansas for 1897.....	4 “
	Report on Mineral Resources of Kansas for 1898.*	
	Report on Mineral Resources of Kansas for 1899.....	4 “
	Report on Mineral Resources of Kansas for 1900 and 1901,	5 “
	Report on Mineral Resources of Kansas for 1902.....	7 “
	Report on Mineral Resources of Kansas for 1903.....	3 “

Volume I is devoted entirely to reconnaissance work in stratigraphy and a preliminary description of the general geology of eastern Kansas, with a short description of the oil- and gas-fields of the state and a preliminary catalogue of invertebrate fossils found in the Carboniferous age.

Volume II is a similar description of the stratigraphy and other features of general geology of western Kansas, being a companion to Volume I. It has a short chapter on some phases of vertebrate paleontology.

Volume III is a special report on coal, giving a general account of the stratigraphy of eastern Kansas, the most extensive yet published, and a detailed account of the coal-bearing strata of the state, methods of mining, the chemical and physical properties of Kansas coal, and other points of a like nature.

Volume IV is devoted entirely to the paleontology of the Upper Cretaceous. It is profusely illustrated with plates and cuts of vertebrate fossils from western Kansas.

Volume V is a special report on gypsum and gypsum cement plasters, giving the results of about three years' investigation. This is probably the best account yet published on this interesting product.

Volume VI is the second volume on paleontology, and is occupied jointly by Carboniferous invertebrates and Cretaceous fishes.

Volume VII is devoted entirely to the mineral waters of the state, and gives a description not only of the mineral waters of Kansas, but of mineral waters in general.

Volume VIII is a special report on lead and zinc.

The series of annual reports began with a report on the mineral productions of the state for 1897, and has been issued annually ever since, excepting one year. The reports for 1900 and 1901 were issued jointly. Largely they are repetitions of the same subjects, as each one of them contains a complete summary of the total state production to date. They cover the subjects of gold, silver, lead and zinc, coal, oil, gas, clay products, gypsum, hydraulic and Portland cements, building stone, and salt.

The report for the year 1902 was delayed in publication and thereby admitted a short report on the extraordinary flood of the Kansas river in May and June, 1903. The report for 1898 contains an extended description of Kansas salt as a special article, and similarly the report for 1902 has a specially prepared chapter on Portland cement.

XIII. HIGH SCHOOL VISITATION.

By the constitution of the state the University of Kansas is made the head of the public school system. This provision places upon the University a definite obligation. It makes it necessary for the University to maintain its position at the head of the whole system by means of an organic relation to the parts.

Some of the ways in which this may be accomplished have been determined by legislative enactment. The county high-school law provides that the schools must maintain courses of study which will enable graduates to enter the Freshman class of the University without condition. The Barnes law also makes the provision that the University shall determine the standard which high schools must reach in order to receive the benefits accruing from that act. And the law which has reference to the certification of teachers who are graduates of the colleges in Kansas emphasizes the fact that their standard of entrance requirements must be equivalent to that maintained by the University.

In order that the University might fulfil its function in this regard, visitation and cooperation were necessary. When the preparatory department was dropped in 1891 the high schools began to enlarge their facilities and broaden their courses of study in order that they might successfully carry on preparatory work. The University sought to assist them in this larger field by visitation and accreditation, and while it was carried on in a more or less desultory and unsystematic way by various members of the Faculty, it served the purpose very well for a time and kept alive an intimate relationship between the University and the preparatory high schools.

It was not long, however, until this method was found very inadequate. As the University grew in size and complexity, and more especially as the high schools increased in number, this method of visitation became inefficient and impractical. Therefore, in September, 1905, a regular University officer was elected, known as the High School Visitor, who should devote his entire time, or as much of it as was necessary, to this important work. The duties of this officer may be briefly enumerated as follows: To visit the

high schools as often as practicable, for the purpose of consulting with principals and instructors about their work and making such observations upon the equipment, character, and amount of instruction given as time and opportunity will permit; to furnish principals and superintendents with suggestive courses of study which will satisfy college entrance requirements, and also to furnish in detail the amount of work that should be covered in each unit of time; to assist school authorities in every possible way to increase the efficiency of their schools, and make of them consistent educational instruments in the life of the state.

The attitude of all connected in this work in any capacity is one of friendliness and cooperation. We believe that it is the duty of the University to meet the requirements of the high schools, not by lowering its standard, but by broadening the field of preparatory requirements, thus giving the high schools an opportunity to better serve the needs of the community for which they really exist. The high school has a definite function to perform in this system of public education, and by doing this conscientiously is best serving the interests of the University. What the University needs, what the state is expecting, of its high school graduates, is a four-years course of consistent, thorough training, which will enable them to undertake the more difficult tasks of college work, or the more serious responsibilities of active life. To this end, the University, through its High School Visitor, comes to the 200 high schools in Kansas in the belief that it can render valuable service in the way of advice, suggestion, and cooperation.

ACCREDITED SCHOOLS.

High schools which maintain a high standard of proficiency and which have adopted a course of study covering four years of work, are recognized by the University of Kansas by placing them on an accredited list. This list is revised every year and published in the annual catalogue. The graduates of schools thus affiliated with the University, when recommended by the principal or superintendent, are entitled to entrance credit without examination, provided the subjects for which they ask credit are distributed according to the required groups.

An accredited school should measure up to the following requirements:

1. The instructors should be well qualified and specially trained, both with reference to subject-matter and methods for a special line of work. They should be graduates of a university, college, or high-grade normal school.

2. Instructors should not be required to carry more than six recitations per day, and these should be confined to two lines of work, as, for example, English and history.

3. In the larger high schools (those enrolling 300 or more), the principal should have at least one-half of his time for supervision. In the smaller schools, he should have from one to three periods a day for the same purpose.

4. The laboratories should be furnished with tables for individual work and such apparatus as is necessary to enable the students to perform all experiments.

5. A laboratory period should be twice the length of a recitation period, and in each of the sciences there should be two laboratory periods per week.

6. Students should have access to standard books of reference and supplementary works in literature, history, science, and art.

7. The efficiency of instruction, habits of thought and study, and general intellectual and moral conditions in a school are important factors, and therefore only the schools which rank well in these particulars, as evidenced by careful, sympathetic inspection, shall be considered eligible for this list.

Schools in this list are fully accredited and are working under the most favorable conditions.

NAME OF SCHOOL.	Superintendent.	Principal.
Abilene.....	W. A. Stacey, B. S.....	Chas. H. Brooks.
Academy of Idaho, Pocatello..		John W. Faris.
Albuquerque, N. M.....	J. E. Clark, M. Pd.....	J. A. Miller, B. Pd.
Anthony.....	J. H. Clement, A. B.....	Adeline M. Finn, A. B.
Argentine.....	H. P. Butcher, A. B.....	Minnie J. Oliverson, A. B.
Arkansas City.....	L. W. Mayberry, A. B.....	John F. Bender, A. B.
Atchison.....	N. T. Veatch.....	A. H. Speer, A. B.
Atchison County, Effingham..		John W. Wilson, A. B.
Bartlesville, Okla.....	Lynn Glover.....	Lynn Glover.
Beaverhead County, Dillon, Mont.....		L. R. Foote, B. L.
Beloit.....	J. O. Hall, A. B.....	T. P. Downs.
Burlingame.....	C. A. Deardorff, M. E.....	Grace Brigham, M. A.
Central High, Kansas City...		I. I. Cammack.
Chanute.....	Jas. H. Adams.....	H. P. Shepherd, A. B.
Chase County, Cottonwood Falls.....		B. F. Martin.
Cherokee County, Columbus..		C. S. Bowman.
Cherryvale.....	A. J. Lovett, A. M.....	E. L. Thompson.
Clay County, Clay Center...		S. A. Bardwell.
Coffeyville.....	W. M. Sinclair.....	H. S. Dwelle.
Concordia.....	A. F. Senter, B. S.....	Ray Green, B. S.
Council Grove.....	A. M. Thoroman.....	
Crawford County, Cherokee..		W. S. Pate.
Decatur County, Oberlin.....		W. G. Riste.
Dickinson County, Chapman,		J. P. Perrill, B. P.
El Dorado.....	Warren Baker.....	C. F. Smith, B. S.
Ellsworth.....	Homer S. Myers, A. M.....	Lewis H. Beall, A. B.
El Reno.....	F. N. Howell, A. B.....	E. A. Robinson, A. B.
Emporia.....	L. A. Lowther, A. M.....	C. H. Lyon.
Eureka.....	B. E. Lewis, A. M.....	W. A. Bailey, A. B.
Fort Scott *.....	D. M. Bowen, A. B.....	J. B. Stokesberry, A. B.
Galena.....	Leslie T. Huffman.....	D. H. Holt.
Garnett.....	C. H. Oman.....	Geo. H. Marshall.
Great Bend.....	C. A. Strong.....	W. L. Bowersox.
Halstead.....	C. O. Smith.....	O. E. McCroskey, A. B.
Harper.....	E. E. Sluss, B. S.....	Margaret W. Dean.
Herington.....	A. J. McAllister, B. S.....	Lou Kinne, A. B.
Hiawatha.....	Geo. G. Pinney, A. B.....	A. C. Andrews, A. B.
Holton.....	E. L. Holton, A. B.....	W. H. Caruthers, A. B.
Hot Springs, Ark.....	Geo. B. Cook.....	F. C. Nolen, A. B.
Humboldt.....	J. E. Cook.....	A. I. Decker.
Hutchinson *.....	R. R. Price, A. M.....	Chas. A. Wagner, A. B.
Iola.....	Clifford A. Mitchell.....	L. H. Wishard.
Joplin, Mo.....	L. J. Hall.....	S. A. Baker, B. Pd.
Junction City *.....	W. S. Heusner, A. M.....	R. F. Mills, A. B.
Kansas City, Kan.....	M. E. Pearson, B. D.....	J. M. Winslow, A. M.
Labette County.....		W. M. Kyser, A. B.
La Junta.....	George L. Hess, Ph. B.....	Chas. E. Griffin, B. S.
Lawrence *.....	F. P. Smith, A. M.....	F. H. Olney, A. B.
Leavenworth *.....	G. W. Kendrick.....	Belle Whitrock.
Lewis Academy, Wichita.....	R. S. Lawrence, Ph. D.....	J. M. Naylor, Ph. D.
Loretto Academy, Kansas City, Mo.....		Sister Louise Wise.
Lyons.....	T. A. Edgerton.....	Louis Ringwalt.
Mankato.....	F. W. Simmons, M. S.....	Myrtle Pider, A. B.
Manual Training, Kansas City, Mo.....		
Marion.....	J. M. Greenwood, Ph. D..	E. D. Phillips, Ph. M.
Marysville.....	H. H. Van Fleet, A. B.....	Clara Morris.
McPherson.....	C. B. Myers, A. B.....	E. L. Heilman.
Minneapolis.....	Chas. W. Kline, A. B.....	Clinton Wright.
Montgomery County, Inde- pendence.....	D. O. Smith, B. S.....	Ethel McCaughy, A. B.
		S. M. Nees, B. S.

ACCREDITED SCHOOLS—CONTINUED.

NAME OF SCHOOL.	Superintendent.	Principal.
Newton	D. F. Shirk, A. B.	O. J. Silverwood, A. B.
Norton County, Norton		H. H. Gerardy.
Olathe.....	R. L. Parker, A. M.	W. H. Eisenman, A. B.
Ottawa.....	A. L. Bell, A. M.	W. D. Buchholtz, B. L.
Paola.....	F. K. Ferguson, B. F.	C. H. Hepworth, Ph. B.
Parsons	J. A. Higdon, A. B.	Louise M. Schaub.
Peabody	W. D. Ross, A. M.	Daisy Spilman, A. B.
Pittsburg.....	A. H. Bushey.....	R. E. Hartsock, B. S.
Plainville.....	C. E. Rarick, A. B.	Lulu A. Roach, A. B.
Pratt.....	W. Falkenrich, A. B.	Irene Crawford, A. B.
Prosser, Kansas City, Mo.....		J. P. Richardson, A. B.
Rosedale.....	Geo. E. Rose, B. D.	Anna D. White, A. B.
Salina.....	G. R. Crissman, A. B.	John Lofty, A. B.
Sedgwick.....	Robt. N. Halbert, Ph. B.	E. C. Stinson.
Seneca.....	R. G. Mueller, A. B.	Pearl McCurdy, Ph. B.
Sheridan County, Hoxie.....		H. C. Jent.
Smith Center.....	T. H. Hooper, A. B.	A. McKechnie.
Southern Kansas Academy, Eureka.....		James F. Eaton, A. M.
Sumner County, Wellington*, Sterling.....		W. C. McCroskey, A. B.
St. Joseph, Mo.....	Geo. L. Seeley, A. B.	Jeanette M. Inches, Ph. B.
Thomas County, Colby	J. A. Whiteford	R. H. Jordan, A. B.
Topeka*.....	L. D. Whittemore, A. M.	W. E. Ray, A. M.
Trego County, Wa Keeney.....		H. L. Miller, A. B.
University Military Academy, Columbia, Mo.....		J. H. Niesley.
University Preparatory Sch., Kansas City, Mo.....		John G. Welch, A. M.
Urbana University Academy, Warrensburg, Mo.....		Eugene E. Sallee, A. B.
Washington.....	N. G. Morrow, Pd. M.	Russell Eaton, A. B.
Wentworth Military Academy, Lexington, Mo.....	W. D. Vincent, A. B.	Edward Beatty, Bd. B.
Western Military Academy, Upper Alton, Ill.....	W. M. Hoge, A. M.	Paul S. Kanty, A. B.
Wichita*.....		R. N. Cook, A. B.
Winfield.....	R. F. Knight, A. B.	Albert M. Jackson, A. M.
	J. W. Spindler, A. M.	E. H. Ellsworth, A. M.
		Blaine F. Moore, A. M.

* Schools accredited by the North Central Association of Colleges and Secondary Schools.

Schools named in this list are *fully accredited*, but fall short of the most favorable conditions in some respects. (It may be a shortage in laboratory equipment, short school term, or perhaps the teachers are required to carry too many recitations.)

NAME OF SCHOOL.	Superintendent.	Principal.
Belleville.....	E. E. Haney	Dorothy Doyle.
Burlington.....	Inez Chapman, A. B.	Myrtle Collins.
Caldwell.....	D. C. Porter, A. B.	Mary Vasey.
Clyde.....	C. M. Ware	Emma M. Palmer, A. B.
Ellis.....	B. E. Ford, B. S.	Minnie Wendel.
Frankfort.....	M. G. Kirkpatrick	Harriet Landers.
Garden City.....	E. F. Ewing, A. B.	May Cathcart.
Gas City.....	H. D. Ramsey	Alice Rose, A. B.
Gove County, Gove.....		F. E. Lindley.
Horton.....	W. W. Wood, A. B.	W. M. Blair, A. B.
Howard.....	Harley I. French	H. D. Paynter.
La Harpe.....	A. J. Baker.....	
Larned.....	W. S. Robb, B. S.	Mary E. Smith, Ph. B.

NAME OF SCHOOL.	Superintendent.	Principal.
Lyndon	John H. Linn.....	John H. Linn.
Neodesha.....	J. M. Steffen.....	H. J. Davis.
Osage City.....	E. C. Hackney.....	C. D. Jennings.
Osborne.....	R. K. Farrar, B. S.....	Emma Schaich, B. A.
Osawatomie.....	C. L. Williams.....	Floyd B. Lee.
Rawlins County, Atwood	C. W. McCormick, A. B.....	
Russell.....	N. U. Spangler.....	S. J. Butts, A. M.
Sabetha.....	Geo. T. Beach, A. M.....	Mary Roseberry, A. B.
Stockton.....	Geo. B. Burkholder, B. P.....	Ethel Smith, A. M.
Wamego.....	J. P. McCoy.....	Grace C. Eaton, B. A.
Yates Center.....	I. C. Gregory, A. B.....	E. Grace Melton.

The schools named in this list fall short of full preparation by not more than three units.

NAME OF SCHOOL.	Superintendent.	Principal.
Alma.....	F. M. Patterson, B. S. D.....	L. B. Burt.
Attica.....	S. B. Mordy, M. A.....	Harry Mudge.
Axtell.....	R. E. Long.....	
Augusta.....	J. H. Gibson.....	Vivian Roberts, A. B.
Belle Plaine.....	C. H. Landrum, A. M.....	Lita Battey, A. B.
Blue Mound.....	A. S. Hiatt, A. B.....	M. Ellen Dingus, B. S.
Bonner Springs.....	Joseph Stottler, M. S.....	Vergie Williams.
Bronson.....	C. M. Smith.....	Mrs. C. M. Smith.
Blue Rapids.....	A. J. Clark, A. B.....	H. J. Garnett.
Burton.....	D. E. Conner.....	Ida B. Shive, A. B.
Cawker City.....	A. P. Gregory, B. S.....	A. P. Gregory, B. S.
Carbondale.....	Chas. Kelley.....	D. E. McCrory.
Centralia.....	A. U. Jarrett.....	Mary White, A. B.
Clifton.....	G. B. Buikstra, A. B.....	W. A. Cain.
Colony.....	John B. White.....	John B. White.
Delphos.....	M. C. Shaible, B. S.....	Belle Lunden, B. Ped.
Dixon Township, Argonia.....	Will Poundstone.....	
Dodge City.....	R. M. Killian, A. B.....	Howell P. Lair, A. B.
Douglas.....	R. A. Felton, Ph. B.....	Etta Marshall.
Erie.....	F. L. Pinet.....	Winfield Davis.
Eskridge.....		J. H. Houston.
Florence.....	C. E. St. John.....	Bertha Van Hove.
Girard.....	W. W. Shideler, A. B.....	Lillian Bell, A. B.
Glen Elder.....	R. L. Hamilton.....	Lulu Walton, A. B.
Greenleaf.....	L. P. Wharton, B. S.....	Mary Lloyd, B. S.
Hartford.....	Anna H. Brogen.....	Anna H. Brogen.
Hill City.....	A. E. Lunceford.....	Kathryn Chance.
Hillsboro.....	A. B. Cope, A. M.....	
Kingman.....	A. W. Ault, A. B.....	Maude Babcock.
Kinsley.....	D. A. Baugher.....	D. A. Baugher.
LaCygne.....	J. E. Chamberlain.....	Maud Merriman.
Lecompton.....	J. W. Murphy, A. B.....	Alice Hyatt.
Le Roy.....	E. W. Fent.....	Lena Ernst.
Lincoln.....	I. L. Mitchell, B. Ped.....	Nora Dalby.
Little River.....	I. C. Meyer.....	
Logan.....	S. V. Mallory, B. S.....	Edith Haile, B. Ped.
Maple Hill.....	Clarence Pearson, A. B.....	Clara Carr, A. M.
Moline.....	J. L. Shearer, B. D.....	Miss D. Bates.
Moran.....	Geo. E. Jones.....	Miss C. J. Bailey.
Mound City.....	O. B. Melia.....	J. L. Kyle.
Nortonville.....	Guy T. Justis, A. B.....	Hattie Freeland, A. B.
Onaga.....	Superintendent French.....	Grace Stelter, A. B.
Oskaloosa.....	W. A. Anderson, A. B.....	Sophia Williams.

ACCREDITED SCHOOLS—CONCLUDED.

NAME OF SCHOOL.	Superintendent.	Principal.
Overbrook	J. E. Watson, A. B.	Helen Ingham, A. B.
Phillipsburg	T. O. Ramsey, A. B.	Blanche Gebhart, Ph. B.
Pleasanton	J. VanArsdale, A. B.	Catherine Hosford, A. B.
Reading	Elizabeth Finlayson, B. S.,	George L. Hensley.
Scranton	J. M. Colburn.	
Sedan	H. G. Adams, B. S.	E. J. Bennett.
Sherman County, Goodland ..	E. E. Mitchell, Ph. B.	Della Cardwell, A. B.
Solomon	W. O. Steen	Rhoda Field.
Stafford	Arthur L. Stickel, A. M.	Henrietta H. Hall.
St. John	Chas. M. Hilleary	Joseph H. Byers, A. B.
St. Mary's	N. F. Daum, A. M.	Miss Moriarty.
Tonganoxie		F. A. Brackett.
Valley Falls	S. D. Dice, A. B.	Maud Myers.
Westmoreland	F. W. Comfort	Nellie McClure, Ph. B.
Waterville	S. L. Soper, A. B.	Abby E. Beckwith, A. B.
Waverly	O. D. Coover	Ida M. Morrison.
Weir	R. Rankin	Eva DeWeese.
Wetmore	Jos. I. Knott	Hulda L. Ise.
Wilson	H. Coover	Agnes Clark.

Schools named in this list offer courses that have been approved by the University, but they have not yet fulfilled other conditions for accredited relations.

NAME OF SCHOOL.	Superintendent.	Principal.
Altoona	H. C. Duckworth.	
Boling		Harriet M. Woodward.
Buffalo		H. E. Clewell.
Burr Oak	F. Eaton, B. S.	Inga Dahl.
Cheney		T. F. Kabler.
Corning	W. R. Anthony.	
Formoso	G. W. Kleihege, B. S.	
Gardner	J. W. Gowans, A. B.	
Glasco	E. C. Troemper.	
Gypsum	J. E. Coe, A. B.	
Havensville	B. F. Sinclair, A. B.	
Hoisington	J. J. Caldwell.	
Irving	R. M. Lockridge.	
Kincaid	Thos. E. Osborn.	
Lane County		D. E. Haglund, A. B.
Lansing		Jas. B. Kelsey.
Linwood		Erwin E. Heath.
Little River	I. C. Meyer.	
Lorraine		J. C. Anderson, B. P.
Louisburg	J. E. Stroud.	
Marquette	Chas. E. Davis.	
Scandia		G. E. Thorpe.
Scott County		R. Bullimore.
Sylvan Grove		Fred Cooper, A. B.
Syracuse	H. E. Walter, A. B.	Effie Markwell.
Wathena	V. E. Postma	Edna S. Whitney.
Wellsville	J. W. Roberts, A. B.	Ellen Cox.
Williamsburg	J. S. Lyon.	

PART V.

DEGREES CONFERRED AND
LISTS OF STUDENTS.

(423)

DEGREES CONFERRED.

JUNE, 1906.

MASTER OF ARTS.

Leverett A. Adams,	Lawrence.
Arthur H. Basye,	Lawrence.
Clara May Carr,*	Leavenworth.
Alfred B. Cope,	Ozawkie.
James A. Dickson,	Auburn.
Mary Augusta Duke,*	Lawrence.
Anna Marie Greene,	Topeka.
Roy Graham Hoskins,	Lawrence.
James Willard Mayberry,	<i>Edmond, Okla.</i>
Henry B. Miller,	Rossville.
Richard E. Scammon,	<i>Olden, Mo.</i>
Lizzie Williams Smith,	Stockton.
Cora Taylor,	Lawrence.

MASTER OF SCIENCE.

Oliver N. Wampler,	<i>Webb City, Mo.</i>
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CHEMICAL ENGINEER.

Fred Baker Porter,	Lawrence.
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BACHELOR OF ARTS.

Ida May Ahlborn,*	Smith Center.
Helen Adelaide Alder,	Lawrence.
Joseph Savage Alford,	Lawrence.
Lloyd Emerson Bailer,	Kansas City.
Georgia Baird,*	Highland.
Eva Baker,	Garden City.
Frank Thomas Barlow,	Wellington.
Ruth Barnett,*	Wellington.
J. Wharton Bartholow,	Williamsburg.
Lita Alleen Battey,*	Kansas City.
Ada Elizabeth Bechtel,*	Hiawatha.

*Also received the University teachers' diploma.

Abbey Eliza Beckwith,*	Hiawatha.
John Frederick Bender,	Holliday.
Mary Jane Bennett,*	Pittsburg.
Hedwig Florence Berger,	Kansas City.
Oliver Bigelow,	Lawrence.
Charles Jay Bliss,	Oskaloosa.
Lois Borland,	Scranton.
Ellen Boyle,	Boyle.
Grace Isabel Boyle,	Boyle.
Louise Lida Bristol,	Anthony.
Katie Brown,	Lawrence.
Howard J. Brownlee,	Lawrence.
Emile Mehl Brunner,	Onaga.
Raymond Cooley Bull,	<i>Cameron, Mo.</i>
Della D. Cardwell,	St. John.
Willis H. Carothers,*	Hiawatha.
Clara May Carr,	Leavenworth.
Anna May Carter,*	Reno.
Ada E. Cates,	Chanute.
Anna Belle Clinger,*	Lawrence.
Capitola Collier,*	Liberal.
Olive Lizzie Collins,	Lawrence.
Cora Nina Cook,	Scranton.
Charles Kneale Corkill,	Lawrence.
Paul McPherson Cory,	Parsons.
Kate Belle Cunningham,*	<i>Kansas City, Mo.</i>
Thomas Henry Cureton,	Lawrence.
Rowena Mabel Davis,	Garnett.
Edna Dinsmoor,	Lawrence.
Marguerite Dixon,	Wichita.
Caroline Doubleday,	Lawrence.
Bessie Eckley,*	Leavenworth.
Tema L. Eyerly,	Nortonville.
John William Francis,	Kansas City.
Violetta Garrett,	Lawrence.
Frank Gephart,	Oskaloosa.
Gertrude Gilmore,	Lawrence.
Ralph Gowans,	Lawrence.
Birdie Oneita Greenough,	Wilson.
Anna Gardner Harris,	Lawrence.
John King Harvey,	Salina.
Harry L. Heinzman,	Topeka.

*Also received the University teachers' diploma.

Katherine Hosford,*	Lawrence.
Elsie May Hoskins,	Lawrence.
Edward Everett Hudson,	Lawrence.
Margaret E. Johnsten,*	Delphos.
Margaret Effie Jones,*	Howard.
Jesse William Kayser,	Wellington.
Mabel Etta Kent,*	Paola.
Inez Ethel Kilgore,*	Wichita.
Lou Kinne,*	Moran.
Elizabeth T. Kirkwood,	Emporia.
Frances Elise Lahmer,*	Lawrence.
Amy Eunice Langworthy,	Leavenworth.
Vivian Ledgerwood,*	Norton.
Chester Arthur Leinbach,	Onaga.
Annette Leonard,*	Topeka.
Celia Louise Lindsay,*	Lawrence.
Albert M. Longenecker,	Paola.
William Arthur Luby,	<i>Kansas City, Mo.</i>
Paralee Lucas,	Lawrence.
Winnifred H. Luther,*	Lawrence.
Wilbur Fay Maddox,	Oberlin.
Lista Makimson,*	Kansas City.
William M. Mayfield,	Lansing.
Frank Edgar Melvin,*	Iola.
Ivah Eloise Merwin,	Stockton.
Florence B. Mitchell,*	Iola.
Ulysses Grant Mitchell,	Lawrence.
Celia Mulvihill,*	Perry.
Grace C. McKnight,	Hiawatha.
Ella May Nash,*	Lyons.
Calvin Hood Newman,	Emporia.
Elmira Elsie Noyes,	<i>Portsmouth, Va.</i>
Maude Olander,*	Kansas City.
Clarence Peter Pearson,*	Lawrence.
Margaret E. Philbrook,	Lawrence.
Frank Dewey Phillips,	Lawrence.
Georgia E. Pilcher,*	Lawrence.
Arthur Dunn Pitcher,	Havensville.
Nellie Brander Potts,	Paola.
Gertrude Priestley,*	Lawrence.
Josie Belle Rambo,*	Lawrence.
Gertrude G. Reed,*	Topeka.

*Also received the University teachers' diploma.

Trilla Reed,*	Iola.
William R. B. Robertson,	Manchester.
David Beach Robinson,	Lawrence.
Harry F. Roller,	Lecompton.
Rial Catlin Rose,	Cawker City.
Frank Finch Rupert,	Arkansas City.
John Gibson Sargent,	McPherson.
Walter B. Satterthwaite,	Girard.
Harvey Shippy,	Woodbine.
Benjamin F. Sinclair,	Hooser.
Mary Grace Smith,	Hutchinson.
William Alfred Starin,	Netawaka.
Benjamin F. Stelter,	Lawrence.
Grace May Stelter,*	Lawrence.
Herbert Tuthill,	Salina.
Margarethe von Unwerth,	<i>Kansas City, Mo.</i>
Jonathan Van Arsdale,	Lawrence.
Maude B. VanCleave,*	Kansas City.
Georgia Virmond,*	Hays.
Luella Warren,	Hutchinson.
Leroy S. Weatherby,	Lawrence.
Aileen March Weaver,	Lawrence.
Will Glentworth West,	McPherson.
Christmas Wilson,*	Iola.
Fred Otto Wulfekuhler,	Leavenworth.
George Frederick Zook,	Fort Scott.

BACHELOR OF SCIENCE.

Ira James Adams,	Perry.
Irwin D. Adams,	Caldwell.
Ray Barton,	Lawrence.
Frank G. Bedell,	Iola.
Nels C. Benson,	Lawrence.
Ernest Bateman, Black,	Meade.
Floyd Breneman,	Osawatomie.
Lawrence Brett,	Lawrence.
Herbert Dunmire,	Lawrence.
George T. Hansen,	Logan.
Geo. De Forest Johnson,	Lawrence.
Wilford Kepner,	Sabetha.
William Jacob Leighty,	Tonganoxie.
John B. Martin,	Mound City.
Norman M. McGillivray,	Kansas City.

*Also received the University teachers' diploma.

Alden McLauthlin,	<i>Denver, Colo.</i>
William Neville,	Lawrence.
Glenn L. Parker,	Olathe.
Frank Plake,	Chanute.
Carl Scheller,	Kansas City.
Charles Homer Seaver,	Ellsworth.
Albert F. Smethers,	Eureka.
Thomas J. Strickler,	Topeka.
Oliver N. Wampler,	<i>Webb City, Mo.</i>
Walter Ward,	Belleville.
Bruce Williams,	Chanute.
Oscar A. Zimmerman,	Olathe.

BACHELOR OF MUSIC.

Carlotta Clark,	Sharon Springs.
Helen Louise Gilson,	Lawrence.
Emily Alice Leonard,	Lawrence.
Pearl Bechtel Maser,	Parsons.
Anna Louise Sweeney,	Lawrence.
Alice Maude Taylor,	Lawrence.

BACHELOR OF LAWS.

George J. Benson,	El Dorado.
John Winter Blood,	Toronto.
Otto J. Briley,	Chanute.
Sadie Cleland,	Lawrence.
Wilber Esting Broadie,	Winfield.
Perry C. Cook,	Gove City.
Luther W. Cureton,	Lawrence.
Ernest Disney,	Independence.
Jeremiah E. Driscoll,	Wilson.
William Henry Elder,	Burrton.
Clarence S. Ford,	Garden City.
Walter L. Heard,	Arkansas City.
Charles W. Jennings,	Kansas City.
Herbert M. McCartney,	Neodesha.
Ross Clinton McCormick,	Phillipsburg.
Malcolm McNaughton,	Tonganoxie.
John A. Naill,	Herington.
Frank Organ,	Lawrence.
Wilbern Parker,	Emporia.
Fredrick Francis Perry,	Kiowa.
C. Oscar Pingry,	Pittsburg.

Arthur Charles Pooler,	Beloit.
Harold Emerson Popham,	Minneapolis.
Arthur Relihan,	Smith Center.
John Roaten,	Oklahoma, Okla.
Clarence Roberts,	Lawrence.
Fred Sedgwick,	Parsons.
Dennis J. Sheedy,	Fredonia.
Ray Montgomery Staker,	Wichita.
Charl Stichter,	Pleasant Hill, Ohio.
Joseph Henry Sutton,	Harris.
Theodore Asa Swan,	Pittsburg.
John R. Thorne,	Olathe.
Charles M. Vaughn, jr.,	Marion.
Nelson J. Ward,	Belleville.
Wallis D. Wilson,	Horton.
Roscoe Winnagle,	Warren, Ohio.

PHARMACEUTICAL CHEMIST.

Frank Eugene Chapin,	Minneapolis.
Warren Dennis,	Stockton.
Judah Drisko,	Abilene.
Frank Hayden,	Ponca City, Okla.
Glenn Hill,	Ottawa.
Maurice S. Ingalls, jr.,	Halstead.
Frank K. Joslyn,	Cheney.
Ida Mosher,	Kinsley.
Charles Pedroja,	Hill City.
Roy Marland Riley,	Wichita.
Homer M. Springer,	Leavenworth.
Mamie Swann,	Basehor.
Jacob Fred Terrass,	Alma.
Ora Yates,	Narka.

DOCTOR OF MEDICINE.

Frederick Ira Acheson,	Kansas City.
Melvia Fairetta Avery,	Wakefield.
Jesse Hayes Baldwin, B. S.,	Ada.
Verne Henry Bantleon,	Kansas City.
Fredrick R. Berry, Ph. G.,	Kansas City, Mo.
William Earle Booth,	Sickles, Okla.
Edwin Clarence Button,	Great Bend.
Alfred Leslie Casburn,	Farris, Ill.
Frank Estell Casburn,	Mayfield.
John Adam Crabb,	Topeka.

Joseph H. Crampton,	<i>Colfax, Wash.</i>
Mildred Curtis,	<i>Neosho Falls.</i>
John Dewi Davies,	<i>Concordia.</i>
Edgar L. Davis,	<i>Seneca.</i>
Joseph William Davis,	<i>Independence.</i>
Frank M. Denslow,	<i>Kansas City, Mo.</i>
Arthur Dildine, D. D. S.,	<i>Cheney.</i>
George Ernest, C. H. A. B.,	<i>Hubbell, Neb.</i>
Stanley Herschel Gatch,	<i>Kansas City.</i>
Abram Comingo Griffith,	<i>Kansas City, Mo.</i>
Howard Hamilton, A. B.,	<i>Parkville, Mo.</i>
Daniel L. Heidrick,	<i>Madison.</i>
Ralph C. Henderson,	<i>Erie.</i>
Jesse Newton Hill,	<i>Kansas City, Mo.</i>
Thomas Freeman Howell,	<i>Creed, Colo.</i>
Frederick A. Hummer,	<i>Kansas City, Mo.</i>
Morris Clifford Hutton,	<i>Kansas City.</i>
Harry Hinds Johnson,	<i>Wayland, Mich.</i>
Herbert Riley King,	<i>Jasper, Mo.</i>
Harold Philip Kuhn,	<i>Kansas City, Mo.</i>
Frederick D. Lose,	<i>Madison.</i>
Dale Lucas,	<i>Hillsdale.</i>
Horace Porter Mahan,	<i>Mineral.</i>
William F. Markley,	<i>Kansas City.</i>
James Allen McConnell,	<i>Rosedale.</i>
James McCully,	<i>Kansas City.</i>
Hugh D. McGaughey,	<i>Jewell.</i>
Charles McKinley,	<i>Independence.</i>
Jacob Mohler Miller,	<i>McPherson.</i>
Clifford C. Nesselrode,	<i>Lenexa.</i>
Theodore Allen Prouse,	<i>Kansas City, Mo.</i>
Melvin B. Roberts,	<i>Kansas City.</i>
John Henry Rose,	<i>Osawatomie.</i>
Guy James Russell,	<i>Kansas City.</i>
Claude Lee Schultz,	<i>Caney.</i>
Frederick W. Shaw,	<i>Kansas City.</i>
Grover C. Sherrard,	<i>Republic.</i>
Milton B. Sherrard,	<i>Republic.</i>
Charles N. Slaybaugh,	<i>Kansas City, Mo.</i>
Ronald R. Smith,	<i>Wamego.</i>
Ernest Earle Sparr,	<i>Conway Springs.</i>
Herbert D. Sterrett,	<i>Norcatour.</i>
Claude Earle Stump,	<i>Kildare, Okla.</i>

Fred Charles Tyree,	<i>Carthage, Mo.</i>
Albert John Weiss,	<i>Sabetha.</i>
Francis Elmer Wilhelm,	<i>Winchester.</i>
Benjamin W. J. Worrell,	<i>Kansas City, Mo.</i>

ROLL OF STUDENTS.

GRADUATE SCHOOL.

* Seniors, the College, who have completed sufficient work for the A. B. degree and are doing graduate work.

- Barnett, Charles Arthur, A. B. '01, Ottawa University, *Sociology and Economics, History*, Lawrence.
- Batley, Lita Alleen, A. B. '06, University of Kansas, *History*, Kansas City.
- Bell, Bonnie, A. B. '05, University of Kansas, *French, Education*, Lawrence.
- *Benn, Rara, A. B. '07, University of Kansas, *French*, La Crosse.
- Boyle, Grace, A. B. '06, University of Kansas, *Education, American History*, Boyle.
- Breneman, Floyd, B. S. '06, University of Kansas, *Economics and Sociology*, Osawatomie.
- Briggs, Edward Maurice, A. B. '04, University of Nebraska, *German*, Lawrence.
- Brownlee, Howard Joseph, A. B. '06, University of Kansas, *Anatomy*, Lawrence.
- Buchholz, William David, A. B. University of Wisconsin, *Education, European History*, Ottawa.
- Bunton, Lillian Elizabeth, A. B. '04, University of Kansas, Lawrence.
- Campbell, James Andrew, A. B., '01, A. M. '06, University of Michigan, *German*, Lawrence.
- Cardwell, Della, A. B. '04, University of Kansas, *Education*, St. John.
- Chapman, Inez Maud, A. B. '01, University of Kansas, *English Language and Literature*, Glasco.
- Clark, Eva Gill, A. B. '95, A. M. '04, University of Kansas, *Greek, Latin*, Manhattan.

- Clark, Kate Cecilia, A. B. '04, University of Kansas, *Botany*, Lawrence.
- Clark, Helen Maud, A. B. '03, University of Kansas, *Philosophy*, Lawrence.
- *Coleman, R. V., A. B. '07, University of Kansas, *Greek, Sociology*, Oneida.
- Collins, Olive, A. B. '06, University of Kansas, *Education, German*, Lawrence.
- Corkill, Charles Kneale, A. B. '06, University of Kansas, *Philosophy, Sociology*, Lawrence.
- Cureton, Thomas H., A. B. '06, University of Kansas, *Economics, American History, Education*, Lawrence.
- Cureton, Nellie King, A. B. '05, University of Kansas, *Latin*, Lawrence.
- Curl, Frankie Edith, A. B. '05, University of Kansas, *Physics*, Long Island.
- Deere, Emil O., A. B., Bethany College, *Botany, Zoölogy*, Lindsborg.
- Deming, Claude Earl, A. B. '05, A. M. '06, University of Kansas, *American and European History, Economics*, Westmoreland.
- Dickinson, Lucy Dee, A. B. '06, Washburn College, *Philosophy, Sociology*, Topeka.
- *Essick, Inez Louise W., A. B. '07, University of Kansas, *European and American History*, Kanopolis.
- Fones, Jennie Gar, A. B. '05, University of Kansas, *English Language*, Lyons.
- Ford, Thomas Bartlett, A. B. '04, University of Kansas, *Chemistry*, Lawrence.
- *Gage, John Bailey, A. B. '07, University of Kansas, *European History*, Kansas City, Mo.
- Garrett, Violetta Belle, A. B. '06, University of Kansas, *Latin, German*, Lawrence.
- Gentry, Nora Belle, A. B. '02, Bethany College, *English Literature*, Minneapolis.
- Gephart, Frank, A. B. '06, University of Kansas, *Chemistry*, Oskaloosa.
- Graham, Agnes Emma, A. B. '05, University of Kansas, *European History*, Ottawa.

- Greenough, Birdie Oneita, A. B. '06, University of Kansas, *Mathematics, Sociology*, Wilson.
- Greer, Butler Franklin, B. S. '06, St. John's College, *Philosophy, Sociology*, Winfield.
- *Griffin, Edith, A. B. '07, University of Kansas, *French, European History*, Lawrence.
- Hall, Justus Otho, A. B. '98, University of Kansas, *Education*, Beloit.
- Hambleton, Antrum Marion, Ph. B., Ohio University, *Education, English Literature*, Lawrence.
- Hamill, Claude Emmett, A. B. '98, University of Kansas, *Zoölogy, Anatomy*, Lawrence.
- Hargreaves, Richard Theodore, A. B. '02, University of Kansas, *Latin*, Topeka.
- Hartman, Frank Alexander, A. B. '05, University of Kansas, *Zoölogy*, Kansas City.
- Hayward, Grace Althea, A. B. '05, University of Kansas, *English Language and Literature*, Lawrence.
- Hilkey, Charles Joseph, A. B. '05, Emporia College, *Mathematics, European History*, Scranton.
- Hill, Murray Gardner, A. B. '04, University of Kansas, *English Literature*, Eudora.
- *Hixon, Arthur Warren, A. B. '07, University of Kansas, *Geology, Mineralogy*, Hiawatha.
- Hogg, Archibald, A. B. '94, University of Kansas, *Zoölogy*, Lawrence.
- Howard, John, A. B., Friends University, *English Literature and Sociology*, Lawrence.
- Ise, Charles Dana, A. B. '05, University of Kansas, *Geology*, Downs.
- Johnson, Axel, A. B. '03, Bethany College, *English Literature, Sociology*, Alta Vista.
- Jones, Elgie Joel, A. B. '06, Ottawa University, *Anatomy*, McLouth.
- Kenoyer, Leslie Alva, A. B., Campbell College, *Botany, Chemistry*, Independence.

- *Klingberg, Frank Joseph, A. B. '07, University of Kansas, *European and American History*, Dillon.
- Landrum, Charles Hansford, A. B. '05, University of Kansas, *European History*, Belle Plaine.
- *Lasley, Hallie, A. B. '07, University of Kansas, *American and European History*, Kansas City.
- Lindner, Ethel Florence, A. B. '05, University of Kansas, *German*, Lawrence.
- *Logan, Spencer R., B. S. '07, University of Kansas, *Geology, Mineralogy*, Cherryvale.
- Maddox, Wilbur Fay, A. B. '06, University of Kansas, *Geology, Mineralogy*, Oberlin.
- *Metcalf, Helen Griffin, A. B. '07, University of Kansas, *English Literature*, Lawrence.
- Mitchell, Ulysses Grant, A. B. '06, University of Kansas, *Mathematics*, Lawrence.
- McMath, Edgar Harold, A. B. '02, University of Kansas, *European History*, Goff.
- Neville, William Hobart, B. S. '06, University of Kansas, *Mechanical Engineering, Economics*, Lawrence.
- Nyquist, Gustav Albion, A. B. '01, Bethany College, *Sociology and Economics*, Lindsborg.
- Pilcher, E. Blanche, A. B., '02, University of Kansas, *English Language and Literature*, Lawrence.
- Pitcher, Arthur Dunn, A. B. '06, University of Kansas, *Mathematics*, Havensville.
- Potts, Nellie Brander, A. B. '06, University of Kansas, *English, European History*, Paola.
- Riddle, Arthur Fuller, A. B. '06, Park College, *Sociology and Economics*, Minneapolis.
- Riggs, Henry Clay, A. B. '93, University of Kansas, *Physics*, Lawrence.
- Roberts, Vivian C., A. B. '05, University of Kansas, *American and European History*, Lawrence.

- Robertson, William Rees B., A. B. '06,
University of Kansas, *Zoölogy*, . . . Manchester.
- Rupert, Frank, A. B. '06, University of
Kansas, *Chemistry*, Neodesha.
- Sawtell, James Herbert, A. B. '92, Uni-
versity of Kansas, *History, Econom-*
ics, Oklahoma, Okla.
- Shively, Charles A., A. B. '04, University
of Kansas, *Sociology, American and*
European History, Hays.
- *Shore, Benjamin Butler, A. B. '07, Uni-
versity of Kansas, *German*, . . . Hutchinson.
- Sinclair, Benjamin Franklin, A. B. '06,
University of Kansas, *German*, . . . Hooser.
- Smith, Solon W., A. B. '03, University of
Kansas, *American History*, . . . Stockton.
- Starin, William Alfred, A. B. '06, Uni-
versity of Kansas, *Botany, Zoölogy,*
Chemistry, Netawaka.
- Stone, Sadie M., A. B. '95, University of
Kansas, *Education, European His-*
tory, Lawrence.
- Taylor, Mabel Willett, A. B. '01, Univer-
sity of Kansas, *Sociology, Education*, Lawrence.
- Van Arsdale, Jonathan, A. B. '06, Uni-
versity of Kansas, *German, Mathe-*
matics, Pleasanton.
- Wangerien, Stella, A. B. '04, University
of Kansas, *Education, English*, . . . Vining.
- Walling, Lalia Viola, A. B. '05, Univer-
sity of Kansas, *Physiology*, . . . Lawrence.
- Warren, Luella, A. B. '06, University of
Kansas, *Mathematics*, Hutchinson.
- Wasson, Jennie B., A. B. '04, University
of Kansas, *English Literature*, . . . Lawrence.
- Weatherby, Leroy S., A. B. '06, Univer-
sity of Kansas, *Chemistry*, . . . Lawrence.
- Whitney, Martha Steele, A. B. '03, Uni-
versity of Kansas, *Latin, German*, Olathe.
- Wilson, Christmas, A. B. '06, University
of Kansas, *Latin*, Iola.
- Wood, Bessie Marian, A. B. '04, Univer-
sity of Kansas, *German, Education*, Strong.

*Woodhead, Georgia Madge, A. B. '07, University of Kansas, Lawrence.

Zook, George Frederick, A. B. '06, University of Kansas, *European History*, Fort Scott.

Graduates, 89.

THE COLLEGE.

SENIORS.

Agrelus, Frank U. G.,	Argentine.
Alford, Theodore Crandall,	Lawrence.
Benn, Rara,	La Crosse.
Bernhard, Lillie,	Lawrence.
Bernhard, Rillie,	Lawrence.
Bingler, Alverta Luckey,	Lawrence.
Blair, Gracia,	Lawrence.
Bousfield, Midian Othello,	Kansas City.
Brannon, William Abbott,	Lawrence.
Brawley, Mark Abernathy,	Frankfort.
Brock, Ivy Grace,	Lawrence.
Brown, Barnum,	<i>New York, N. Y.</i>
Campbell, Harry J.,	<i>Elida, N. M.</i>
Campbell, Harry,	Wichita.
Campbell, Mary B.,	Severance.
Carter, Anna Mabel,	Lawrence.
Clark, Earl Finley,	Overbrook.
Clark, May Bernice,	Lawrence.
Coleman, Orla Loomis,	Oneida.
Coleman, Roy V.,	Oneida.
Cooper, Lawrence,	Lawrence.
Dart, Edna R.,	Lawrence.
Dillon, Nelly,	Eureka.
Douglas, Rey Oro,	Mound City.
Emmett, Eveline,	Lawrence.
Everingham, J. Sumner,	Topeka.
Essick, Inez Louise Wymon,	Kanopolis.
Everett, Wilimina,	Fort Scott.
Finch, Howard A.,	Neal.
Fisher, Wilhelm,	Lyons.
Flowers, William B.,	Culver.
Foraker, Nora,	Wellington.
French, Bernice M.,	Lawrence.
Gafford, Earl,	Minneapolis.
Gage, John Bailey,	<i>Kansas City, Mo.</i>
Getty, Carroll Orwig,	Ellsworth.
Gift, Elmer Birdell,	Smith Center.

Goldman, Heim,	Kansas City.
Graffin, Minnie Myrtle,	Eureka.
Grant, Frank Richard,	Ellinwood.
Griffin, Edith,	Lawrence.
Harris, John Percival,	Ottawa.
Hart, Harry,	Beloit.
Hawkinson, John,	McPherson.
Hayden, Mary Lorena,	Holton.
Hazen, Leonard,	Lawrence.
Heeney, Edwin Joseph,	Severance.
Heizer, Florence Mabelle,	Osage City.
Hixson, Arthur Warren,	Hiawatha.
Hoover, Roy William,	Waterville.
Houghton, Howard William,	Beloit.
Hudson, Hazel,	Fredonia.
Humphrey, Karl E.,	<i>El Reno, Okla.</i>
Jackson, Ruby,	Horton.
Jones, Bernice,	Cawker City.
Jones, Lucy Isabella,	Lawrence.
Kiser, Florence,	Clinton.
Klingberg, Frank Joseph,	Dillon.
Lamborn, Clementine,	Leavenworth.
Lander, Addie F.,	Newton.
Landrum, Claude Gresham,	Frankfort.
Lapham, John Wilbur,	Chanute.
Lasley, Hallie,	Kansas City.
Lemmon, Lura Lee,	<i>Warrensburg, Mo.</i>
Lindsey, Lydia,	Mortimer.
Madden, Pauline,	Mound City.
Marsh, Mabel,	Kinsley.
Marshall, Marjorie,	Lawrence.
Martin, Roy H.,	<i>Kansas City, Mo.</i>
Metcalf, Helen G.,	Lawrence.
Mickey, Mary Emily,	Valley Center.
Miller, Vauroy William,	Lawrence.
Mitchell, Caroline,	Lawrence.
Monahan, Dora,	Armourdale.
Moore, Roy Riley,	Chapman.
Muckle, Grace Bailey,	Topeka.
McCanles, Wendell Windom,	Lincoln.
McDonald, Lotta,	Norton.
Paulen, Blanche,	Fredonia.
Pfeifer, Herman,	Minneapolis.

Putnam, George Ellsworth,	Ottawa.
Pyle, Capitola,	Haviland.
Ramsey, Chester Arthur,	Redfield.
Rankin, Alice Mary,	Lawrence.
Relihan, Harry,	Smith Center.
Rhodes, Harry Herbert,	Wellington.
Rice, Edith Sweezey,	Lawrence.
Rogers, Edith Elizabeth,	Lawrence.
Sellers, Alice Pearl,	Osawatomie.
Shanklin, Flora Marie,	Lawrence.
Shore, Butler Lee,	Hutchinson.
Siler, Charles A.,	Lawrence.
Sirpless, Eleanor,	Lawrence.
Smith, Anna C.,	Lawrence.
Smith, Helen Beach,	Nickerson.
Spilman, Mignonette,	McPherson.
Squire, Harry Elmore,	Attica.
Sterling, Genevieve,	Lawrence.
Stevens, Vera Elizabeth,	Lawrence.
Stevenson, Nellie May,	Lawrence.
Stickel, Zulu I.,	Hiawatha.
Stuart, Geraldine,	Lawrence.
Swan, Clifford Howard,	Pittsburg.
Taylor, Raymond G.,	Fort Scott.
Thomas, Richard William,	Emporia.
Tritt, Garfield Alfred,	Wellington.
Warkentin, John H.,	Hillsboro.
Webb, Horton Emmett,	Howard.
Wilhelmi, Alwine,	Lawrence.
Williams, Ada Lucile,	Newton.
Wolcott, Grace,	Lawrence.
Woodbury, Emma Blanche,	Lawrence.
Woodhead, Georgia Madge,	Lawrence.
Zurcher, Rose Frances,	Newton.

Seniors, 114.

JUNIORS.

Angney, Haughey,	Lawrence.
Angney, Urbin,	Lawrence.
Babb, Virginia Elizabeth,	Wichita.
Barrows, Raymond Albert,	Junction City.
Barteldes, Otto August,	Lawrence.
Bigham, Alvin,	Topeka.
Bingler, Ola Luckey,	Lawrence.

Bischoff, Henry John,	Washington.
Black, John Lee,	Lawrence.
Bohannon, Bailey,	Lawrence.
Brock, T. Gertrude,	<i>Excelsior Springs, Mo.</i>
Burnham, Lucia,	Lawrence.
Campbell, Alice Birdine,	Wichita.
Campbell, Kenneth,	Clay Center.
Carpenter, Clara,	Lawrence.
Clark, Genevieve,	Leavenworth.
Cook, Robert Roy,	Clay Center.
Cooke, Sidney K., jr.,	Leavenworth.
Crumb, Ebb S.,	Galena.
Daum, Verna,	St. Marys.
De Moss, Edith Susanna,	Thayer.
Dolbee, Cora Emmett,	Lawrence.
Duer, Guy Robert,	Nickerson.
Eastman, Oscar Frederick,	Bloomington.
Engle, Earl William,	Topeka.
Ergenbright, Mabel S.,	Independence.
Eveland, Helen V.,	<i>Kansas City, Mo.</i>
Funk, Neva,	Iola.
Galloway, Milton,	Wa Keeney.
Gillispie, Cary Blakey,	Cherryvale.
Greenlees, Agnes Mary,	Lawrence.
Guthrie, Guy William,	Marysville.
Harris, Nellie Lois,	Lawrence.
Haskett, Iva,	Concordia.
Heeney, Georgette,	Severance.
Henlen, Florence Camilla,	Herington.
Hess, John A.,	Halstead.
Heuser, Chester Henry,	Fort Scott.
Hill, Ben Samuel,	Walnut.
Hill, John Walter,	Eudora.
Hovey, Wallace Franklin,	Hiawatha.
Hyndman, Henry Finlay,	Lawrence.
Ice, E. Ellen,	Lawrence.
Ingleman, Anna A.,	Lawrence.
Jones, Hal C.,	Iola.
Kent, Mattie,	Lawrence.
Kiefer, Norman,	Lawrence.
Kohman, Henry Adolph,	Dillon.
Lane, Lanorah S.,	Lawrence.
Laptad, Evadne,	Lawrence.

Leary, Sarah Ellen,	Lawrence.
Lenig, Olive Amelia,	<i>Fort Wayne, Ind.</i>
Manning, Robert Guy,	Gypsum.
March, George M.,	Lawrence.
Maris, Mary Avis,	Cloverdale.
Markley, Lola Ethel,	Lawrence.
Maughlin, Mary Belle,	Lawrence.
Miller, William Jesse,	Osage City.
Mitchum, Lillie,	Atchison.
Moodie, Hubert,	Lawrence.
Moodie, William Leslie,	Lawrence.
Moody, Rebecca Elizabeth,	Lawrence.
Morgan, Edwin Clyde,	Clay Center.
Morrow, Ernest L.,	Arkansas City.
McCleverty, Adelbert Durkee,	Fort Scott.
McDaniel, Eugenie,	La Crosse.
McLean, Helen,	Topeka.
McLenon, William Neal,	Effingham.
Pendleton, Claudia,	Lawrence.
Petit, Julian Cæsar,	Walnut.
Petit, William D.,	Walnut.
Phenicie, Ruth Ethel,	Reno.
Pinney, Mary Edith,	Wilson.
Rankin, Madonna Alice,	<i>Albuquerque, N. M.</i>
Rauch, Esther May,	Topeka.
Ray, Robert Jackson,	Sterling.
Reno, Edward Newton,	Lawrence.
Rhodes, Maude Olive,	Dodge City.
Richards, Aute,	Lawrence.
Rinehart, Blanche Elvena,	Lawrence.
Rutledge, Lyman Vincent,	<i>Alva, Okla.</i>
Schloz, Katharina,	Argentine.
Schmidt, Mary Wilhelmina,	Humboldt.
Sears, Burton Peabody,	Lawrence.
Shaffer, Susie Grace,	Hays.
Shearer, Nellie Kathleen,	Lawrence.
Sheldon, Clarence Milton,	Ottawa.
Sheridan, Bernard Long,	Paola.
Siceloff, David Guy,	Belle Plaine.
Simpson, Henry L.,	Kansas City.
Smith, Cecil,	Beloit.
Smith, Henry Hume,	Stockton.
Snyder, Lucy Hortense,	Hays.

Stanton, Fred Hadley,	Lawrence.
Steele, Hattie Elizabeth,	Belvoir.
Sterling, Eugenie,	Lawrence.
Stone, Rosalia Rachel,	Walton.
Stroud, John Earl,	Howard.
Teall, Raymond Edwin,	Oberlin.
Templin, Alice,	Lawrence.
Turner, Edith Alice,	Colony.
Van Cleave, Thomas,	Kansas City.
Virmond, Mary Elizabeth,	Hays.
Wallace, May,	Lawrence.
Walters, Gertrude Merien,	Horton.
Wilcox, Winifred M.,	Concordia.
Young, Carl Henry,	Portland.

Juniors, 107.

SOPHOMORES.

Alexander, Homer Augustus,	Nickerson.
Alexander, Winifred Davis,	Chanute.
Allen, Annie,	Independence.
Apollo, Otto,	Fredonia.
Armsby, Harold Marks,	Council Grove.
Asher, Alice M.,	Lawrence.
Ayers, Nola May,	Horton.
Bailey, Beulah,	Lyndon.
Baldrige, Jessie Belle,	<i>La Junta, Colo.</i>
Barrows, Martha Ella,	Junction City.
Barry, Bernese Loretta,	Lawrence.
Bartholow, Edmund Montgomery,	Williamsburg.
Bass, Mary Lenore,	McPherson.
Bennett, Ethel Vale,	Iola.
Blakey, Eleanor,	Pleasanton.
Brown, Guy Le Roy,	Sabetha.
Buck, Lucy Hayes,	Lawrence.
Bush, Fred Fernley,	Junction City.
Cambern, Fred Jessup,	Erie.
Campbell, Watson,	Attica.
Carter, Frances,	Lawrence.
Chesbro, Claude,	Hutchinson.
Clarke, Adah Alberta,	<i>Sioux Falls, S. Dak.</i>
Clay, Claude Alfred,	Nickerson.
Clyde, Nathana Lore,	Kansas City.
Coe, Jessie May,	Emporia.
Collins, Grace Manifold,	Lawrence.

Copley, Gertrude Edith,	<i>Kansas City, Mo.</i>
Copper, Francis Le Roy,	Cherokee.
Cravens, Thomas Jewell,	Salina.
Cunnick, Irene,	Lawrence.
Dallas, Stella Jessie,	Topeka.
Davis, Philip,	Lawrence.
De Berry, James Lowe,	Paola.
Eggleston, Mabel,	<i>Kansas City, Mo.</i>
Ells, Olive Boisdore,	Kansas City.
Emery, Edward Henry Herbert,	Wetmore.
Eson, Myra Gertrude,	Kingman.
Evans, Albert Steele,	Kansas City.
Everett, Nellie May,	Fort Scott.
Faragher, Paul Vance,	Sabetha.
Fay, Roland Cecil,	Mastin.
Fisher, Thekla Adolphie,	Lyons.
Foraker, Dora,	Wellington.
Fowler, Naomi S.,	Independence.
Ganoun, Edwin Grant,	Cawker City.
Gill, Mabel Ruth,	Clyde.
Glenn, Olive,	Paola.
Grattan, James Edmund,	Sedgwick.
Griesa, William S.,	Lawrence.
Gwinner, Grace Ione,	Dodge City.
Hall, Earl,	Horton.
Hanson, Agnes Caroline,	Lawrence.
Hardiman, Edward James,	Topeka.
Herman, Harold C.,	Reserve.
Hoge, Josephine Clare,	Wellington.
Hosford, Ruby Cornelia,	Lawrence.
Houston, Jessie Nell,	Wichita.
Hunzicker, Lena,	Lawrence.
Jackson, Addie,	Lawrence.
Johns, Floyd Marion,	Glasco.
Johnson, Ralph Charles,	Cottonwood Falls.
Johnston, Mary Helen,	Lawrence.
Kemp, Delbert Clinton,	Lawrence.
Keneaster, Elizabeth Fay,	Lawrence.
Kilpatrick, Rollo Raymond,	Quenemo.
Krehbiel, August Robert,	Lawrence.
Laird, Elizabeth Lucia,	<i>Kansas City, Mo.</i>
Leonard, Louise,	Lawrence.
Leslie, Grace Mease,	Lawrence.

Lindsey, Ray Duncan,	Mortimer.
Livengood, Fay E.,	Hutchinson.
Livers, Arnold Fleming,	Esbon.
Long, Octavia Cornelia,	Lawrence.
Loomis, Blanche,	Fredonia.
Loper, Cleveland,	Norcatour.
Losig, Marx Leopold,	Oberlin.
Loucks, Ethel Mae,	Lawrence.
Luckan, Bertha Gustav,	Lawrence.
Maffet, Maud A.,	Lawrence.
Magee, Harry Lyle,	Blue Mound.
Maughlin, Emma Etta,	Lawrence.
Means, Inez May,	Kansas City.
Merstetter, Amy,	Kansas City.
Miller, Milton Bradford,	Osage City.
Minor, Mary Emma,	Abilene.
Mitchell, Hattie,	Neodesha.
Mitchell, Zella,	Wellington.
Mosher, Guy,	Parsons.
McCarty, Virgil Warren,	La Harpe.
McCurdy, Mildred,	Lawrence.
McNaughton, Alicia Bleakley,	Tonganoxie.
McNutt, Dora,	Eureka.
Nevens, Thomas Arthur,	Garnett.
Parker, Mary Elizabeth,	Lawrence.
Peard, Roger Wood,	Lawrence.
Peet, William Joseph,	<i>Kansas City, Mo.</i>
Perkins, Lola May,	Lawrence.
Phillips, Ruby Anna,	Burlingame.
Pickens, Minnie Laura,	Lawrence.
Powell, May,	Leavenworth.
Pryor, Ralph James,	Lawrence.
Riesen, Emil Richert,	Hillsboro.
Riste, Rose Alma,	Oberlin.
Roberts, Roy Allison,	Lawrence.
Ross, Thomas Cornelius,	Olathe.
Royer, Clifford Fry,	Abilene.
Rummell, Charles William,	Wichita.
Schmitz, Minta,	Paola.
Schwinn, John Morton,	Wellington.
Shea, John Penfield,	Lawrence.
Shipley, Hattie Caroline,	Belleville.
Smith, Clara Gertrude,	<i>Cameron, Mo.</i>

Smith, Mary Alice,	Lawrence.
Smith, Verni L. C.,	Colby.
Spaulding, Iva Maude,	<i>Kansas City, Mo.</i>
Spray, Lester Ellsworth,	Lawrence.
Steeper, Hubart de Tinsley,	Lawrence.
Thomas, Nadia Venita,	Belleville.
Thompson, Fred Marion,	Herington.
Vandling, Vinnie,	Larned.
Wallace, Cora Lee,	Topeka.
Wampler, Clarence,	<i>Webb City, Mo.</i>
Waters, Henry Clay,	Galena.
Wattles, Willard Austin,	Bayneville.
Weaver, Amorette Bullene,	Lawrence.
Weidlein, Edward Roy,	Augusta.
Wiedemann, Edward William,	Lawrence.
White, Rachel,	Delphos.
Williams, Bertha Juanita,	Lawrence.
Williams, Lillie Helena,	Lawrence.
Wilson, Katheryne Marie,	Lawrence.
Wright, Lucy Jennie,	Lawrence.

Sophomores. 133.

FRESHMEN.

Abraham, Lillian Leland,	<i>Kansas City.</i>
Adams, James Valentine,	Chase.
Alford, Katherine Sylvia,	Lawrence.
Allison, Bertha Edna,	Topeka.
Allison, Hazel,	Clay Center.
Axtell, Marguerite,	Newton.
Babb, Alvin Leroy,	Lawrence.
Bader, Jesse Morn,	Le Roy.
Badsky, Mary Ada,	Lawrence.
Bailey, Reginald K.,	Lawrence.
Bailey, Verne Dare,	Mankato.
Baird, Brownlee E.,	Centralia.
Baird, Theodora Van Velsey,	Highland.
Banker, Edward Cleveland,	Overbrook.
Barber, Everett George,	Cherryvale.
Barkdull, Charles Leon,	Lawrence.
Barnes, Mary Eugenie,	Rosedale.
Barnett, Edith Edna,	<i>Kansas City, Mo.</i>
Barnhill, John Firmen,	Paola.
Barton, Isabel,	<i>Kansas City.</i>
Beauchamp, Queena Alice,	Holton.

Beckwith, Amy Clapp,	Hiawatha.
Bedell, Grace Davida,	Iola.
Beerbohm, Margaret Holmes,	Topeka.
Benson, Ellen Mary,	Lecompton.
Bernhard, Eva Charlotte,	Lawrence.
Betournay, Beatrice Bertrand,	Concordia.
Betts, Sibyl Dodona,	Kansas City.
Billings, Roy Egbert,	Cherryvale.
Blackmar, Winifred M.,	Lawrence.
Blair, Alice,	Lawrence.
Bond, Jay,	Lawrence.
Bosse, Milton August,	Ellinwood.
Bossi, Vincent Volta,	Arkansas City.
Bozell, Leo Brent,	Beloit.
Breidenthal, Maurice L.,	Kansas City.
Brobst, Myrtle Ada,	Osborne.
Brown, Belle Adelaide,	Junction City.
Bruce, Olive M.,	Clay Center.
Bullen, Benjamin Talmadge,	Belleville.
Burnett, Clanrold,	Girard.
Burnham, Nellie,	Lawrence.
Burtis, Harry James,	Waterville.
Butcher, Bessie Leota,	Sedan.
Butcher, Estelle Vee,	Sedan.
Byers, Glenn Lewis,	Troy.
Cahill, Leslie,	Lucas.
Calderhead, Iris Gallant,	Marysville.
Carpenter, Juliet,	Lawrence.
Carson, Lenore,	Dodge City.
Case, Hattie Elizabeth,	Arkansas City.
Chalkley, Harold William,	Lawrence.
Chase, Winnifred,	Wichita.
Chesky, Victor Ernest,	Nickerson.
Christian, Estella,	Rosedale.
Clark, Mary Frances,	<i>St. Joseph, Mo.</i>
Clarke, Erminie Ethel,	Lawrence.
Cole, Clifford,	<i>Kansas City, Mo.</i>
Coleman, Charles,	Holton.
Combs, Lester Martin,	Herington.
Connelly, Judith Mary,	<i>Kansas City, Mo.</i>
Converse, Clara Lillian,	Burlington.
Cook, Ward Hance,	<i>Kansas City, Mo.</i>
Cooley, C. Edwin,	Kansas City.

Cooper, Raymond George,	Lyons.
Coston, Corinne,	Topeka.
Craig, Ivy Eliza,	Kansas City.
Cressman, Edmund Dresser,	Lawrence.
Crooker, Arthur Clyde,	Anthony.
Cross, Robert Le Roy,	Sylvan Grove.
Culp, Muriel,	Salina.
Cupp, Charles D.,	Lawrence.
Curtis, Paul Everard,	Almena.
Day, Charles Newton,	Attica.
Demand, J. Wesley,	Chapman.
Demand, Milton Henry,	Chapman.
Deweese, Will George,	Salina.
Dietrich, Roy Kaiser,	<i>Kansas City, Mo.</i>
Dillard, Lucile Lillian,	Fort Scott.
Disney, Lester,	Sedan.
Dodderidge, Henry Alfred,	White City.
Donahue, Edna Eugene,	Wellington.
Dowling, Leigh Dudley,	Norcatour.
Downes, Clinton,	Marion.
Dunaway, Edwin Small,	Oswego.
Dunmire, Harry Clinton,	Lawrence.
Dunn, Grover Lee,	Onaga.
Earl, Edith,	Newton.
Eddy, Carl Gates,	Colby.
Elgin, Emerson H.,	Lincoln.
Elmore, Clarence E.,	Hoisington.
Emery, Helen,	Seneca.
Erwin, Grace,	Kinsley.
Evans, Agnes Louise,	Lawrence.
Farber, Minnie,	Hoxie.
Fenner, Anna Elizabeth,	Humboldt.
Fenner, Hattie,	Humboldt.
Ferguson, Myrtle May,	Kansas City.
Fife, Clyde Lee,	<i>Kansas City, Mo.</i>
Flack, Frank Le Roy,	Longton.
Flynn, Katherine May,	Carbondale.
Fones, Cory Keene,	Lyons.
Fort, Margaret McCreery,	<i>Kansas City, Mo.</i>
Froelich, Jonathan Fred,	Enterprise.
Fullenwider, Marcus Edwin,	El Dorado.
Gafford, Edna May,	Minneapolis.
Galbraith, Lucille,	<i>Nevada, Mo.</i>

Gatlin, Dorothy Madge,	Paola.
Gilbert, Onita Kate,	Arkansas City.
Gill, John Edwin,	Clyde.
Gilmore, Eleanor Margaret,	Lawrence.
Gleed, Mary Elizabeth,	Topeka.
Goodwyn, Alfred Ross,	Minneapolis.
Graham, Helen,	Holton.
Grant, Ethel Bradbury,	Topeka.
Graves, Nellie Marjorie,	Beloit.
Gray, Frances Elizabeth,	Lawrence.
Green, Amy Maria,	Kansas City.
Hackbusch, Florentine,	Leavenworth.
Haddock, Fred Theo,	Rosedale.
Hadley, Winifred Emeline,	Topeka.
Hall, Hazel Louise,	Eureka.
Hanna, Dallas,	Lawrence.
Hansen, Albert Clarence,	Greenleaf.
Harbeson, John Wesley,	Lawrence.
Harlan, Harold Eugene,	Downs.
Harman, Ralph,	Cottonwood Falls.
Hart, Alice,	Beloit.
Harvey, May Lyndel,	Council Grove.
Harvey, Paul Winter,	Columbus.
Hawkinson, Amos Edward,	Marquette.
Heil, John Sidney,	Wamego.
Henrichs, Bessie Annetta,	Humboldt
Hiatt, George Robinson,	Lawrence.
Hill, Theodore Grover,	Pittsburg.
Hinkson, Guy Giddings,	Halstead.
Hobbs, Wilber Abram,	Lawrence.
Hogue, Lillah Eveline,	Springhill.
Hollingsworth, Pearl Evangeline,	Independence.
Holmes, Clarence Price,	Emporia.
Hopkins, Edna Pierson,	Topeka.
Hornaday, Grace Belle,	Lawrence.
Houston, Alice Owen,	Wichita.
Howard, Richard Forrest,	Arkansas City.
Huff, William Manly,	Chapman.
Hull, Blanche Edith,	Lawrence.
Humphrey, Irvin Wesley,	Russell.
Hurst, Letha,	Garden City.
Hyre, Edna Marie,	Lawrence.
Jacobs, Woodie Elmer,	Topeka.

Johnson, Steen M.,	Stratton.
Jones, Charles Earl,	Hutchinson.
Jones, Jessie Irma,	Topeka.
Karr, Aline Alice,	Howard.
Katherman, Maude Blanche,	Lawrence.
Kaull, Harry J.,	Beloit.
Kenny, Gertrude Agnes,	Columbus.
Kingrey, Roscoe Wheeler,	Galena.
Land, William McElroy,	Fort Scott.
Larmor, Wilson Charles,	Garden City.
Lasley, Pearl,	Kansas City.
Lee, Thomas Amory,	Topeka.
Leedy, Edna Katharin,	Eureka.
Lenig, Laura Levina,	<i>Fort Wayne, Ind.</i>
Leonard, J. Clifford,	<i>Kansas City, Mo.</i>
Lindsey, Lola Eleanor,	Cherryvale.
Little, Bessie Agnes,	Eureka.
Lobaugh, Paul Mateer,	Harper.
Long, Maggie-Belle,	Lawrence.
Loofbourrow, Elmer Ray,	Wellington.
Malaby, Homer Everett,	Salina.
Markham, Orlean Edgar,	Washington.
Marks, Julius,	Lawrence.
Marshall, Rachel,	Lincoln.
Martin, Helen Hamilton,	Kansas City.
Martindell, Donald Cameron,	Eureka.
Maurice, Robert Leonard,	Argentine.
Mervine, James Frederic,	Chanute.
Mervine, Marian,	<i>Kansas City, Mo.</i>
Miller, George Harold,	Mahaska.
Miller, Hattie Beecher,	Kansas City.
Miller, J. Earle,	Marysville.
Miller, Kirk Marie,	Kansas City.
Mitchell, Nelle,	Robinson.
Myers, Edith Sara,	Lawrence.
McCleverty, Josephine,	Fort Scott.
McCluggage, Clarence Adelbert, . . .	Douglass.
McCoy, Anna Elizabeth,	Hiawatha.
McCreary, Wilma Pearl,	Leavenworth.
McDaniel, Edward Ernest,	Clay Center.
McDonald, Lillian,	Wellington.
McElfresh, Jessie Lee,	Osage City.
McElfresh, Myrtle Beatrice,	Osage City.

McGlasson, Ernest F.,	Hoxie.
McQuown, William I.,	Walton.
Naramore, Archie Pond,	Herington.
Nelson, Claire Marie,	Leavenworth.
Newbold, Cecil Leslie,	Rosedale.
Noftzger, Millicent Fisher,	Anthony.
Nolder, Helen Alletta,	Newton.
Nugent, Goldwin Inch,	<i>Briggs Corners, Can.</i>
Nutter, Frank Clark,	<i>Kansas City, Mo.</i>
Odden, Otis Walton,	Leon.
Ogden, Floyd Price,	Cherryvale.
Ogden, Raymond Clifton,	Lawrence.
Osborn, Walter Manning,	Waverly.
Overstreet, Maria Leone,	Blue Rapids.
Parker, Clement Arthur,	<i>Kansas City, Mo.</i>
Pearson, Margaret,	Wakefield.
Peck, Arthur S.,	Garnett.
Penn, Pertilla,	Atchison.
Penny, Charles Elmore,	Lawrence.
Perkins, Henry,	Lawrence.
Perkins, Lillian Pearl,	Lawrence.
Perkins, Rollin Morris,	Lawrence.
Pierson, Ralph Laurence,	<i>Fresno, Cal.</i>
Poe, Edna Anna,	Lawrence.
Poindexter, Martin Hatfield,	Topeka.
Potwin, Ross William,	Lyons.
Power, John Byron,	Lawrence.
Prickett, Jesse Uriah,	Wamego.
Prunty, Charles Merle,	Wellington.
Purdy, Jennie Corita,	Chanute.
Radell, Teressa Clara,	Pittsburg.
Radford, Earle Korfhage,	<i>Kansas City, Mo.</i>
Randall, Elsie Flora,	Newton.
Rankin, Juanita Gertrude,	<i>Albuquerque, N. M.</i>
Rarig, Bessie Mabel,	Minneapolis.
Reed, Leslie Scott,	Rosedale.
Riddle, Josephine Marguerite,	Iola.
Ridenour, Ella Bow,	Emporia.
Riste, Faye Margaret,	Oberlin.
Robb, Mina Richie,	Salina.
Roberts, Morris M.,	Great Bend.
Robertson, Flavel,	<i>Kansas City, Mo.</i>
Rodenburg, Hortense,	Leavenworth.

Russell, Elva,	Paola.
Satterthwaite, Mary Ridgway, . . .	Girard.
Sawtell, Helen Ermina,	Junction City.
Schauffler, Edward Reynolds,	<i>Kansas City, Mo.</i>
Schnacke, Francis Dean,	McPherson.
Schnacke, Mary Ruth,	McPherson.
Schumacher, Arnold Joseph,	Valley Falls.
Scott, Helen Elizabeth,	Leavenworth.
Sewell, Thomas Grover,	Elk City.
Shannon, T. Theodore,	Mound City.
Shean, Dudley Boyd,	Gardner.
Shefler, Viola Florence,	Linwood.
Shelby, Ada Catherine,	Lawrence.
Sheppard, James Gifford,	Fort Scott.
Shreve, Emma Maria,	Atchison.
Singleton, Harry,	Benedict.
Slade, Elsie,	Clay Center.
Smart, Georgia Ethel,	Ottawa.
Smart, Lola Lucille,	Ottawa.
Smith, Eustace,	Kinsley.
Smith, Katherine O'Donnell,	Stockton.
Smith, O'Connor Cleveland,	Lawrence.
Spotts, Ralph Hall,	Abilene.
Steele, Ida May,	Lawrence.
Stephens, Elizabeth,	Lawrence.
Steward, William Abbott,	Columbus.
Stolbert, James Albion,	Lawrence.
Stone, Mabel McLelland,	Emporia.
Stough, Martha,	Arkansas City.
Stout, Wesley Winans,	Oswego.
Strickland, Frank,	Kansas City.
Strong, Everett Willard,	Great Bend.
Strong, George Albert,	Gove City.
Stuckey, Pearl Mabelle,	Formoso.
Studt, Leo Henry,	Glasco.
Sutton, Gail Theresa,	Lyons.
Swanson, Arthur Theodore,	Randolph.
Taylor, Earle Howard,	Lawrence.
Teeter, Edna Pearl,	Lawrence.
Terrill, Olive Elizabeth,	Lawrence.
Trowbridge, Harry Martin,	Kansas City.
Turner, Francis Marion,	Clifton.
Turner, John Samuel,	Argentine.

Walls, Lucile,	Ellinwood.
Wenger, Benjamin Edward,	Russell.
Wenger, Joseph Sylvester,	Russell.
Wenrich, David Henry,	Lawrence.
Wheeler, Mary Strever,	<i>Kansas City, Mo.</i>
Whiteford, Nellie Bly,	Osawatomie.
Whitted, Jessie May,	Long Island.
Wilburn, Homer Vernon,	Independence.
Williams, Bertha Hortense,	Oswego.
Williams, Mary Catherine,	Herington.
Wingert, Arthur John,	Hoisington.
Wingett, Alice Virginia,	Sterling.
Wohler, Paul Reinhord,	Chanute.
Woodward, Earl Cool,	Glasco.
Zurcher, Blanche Anna,	Newton.

Freshmen, 294.

SPECIALS.

Abraham, Charles S.,	<i>Dundee, Natal, S. A.</i>
Abraham, R. Clair,	El Dorado.
Adams, Clyde C.,	Lawrence.
Allendoerfer, Maurice,	Concordia.
Andrews, Katheryne,	Lawrence.
Babb, Carolyn Isabel,	Wichita.
Bailey, Lois Maurine,	Lawrence.
Baird, Charles Glenn,	Garden City.
Barrett, George Gordon,	Westmoreland.
Baum, Orla Rey,	Phillipsburg.
Baumgartner, Edwin A.,	Lawrence.
Beard, Harold Wilcox,	Hutchinson.
Beery, Carrie,	Baldwin.
Bennett, Evelyn Joella,	Seneca.
Bischoff, George D.,	Washington.
Bishop, Beulah Irene,	Delphos.
Black, Ethel,	Lawrence.
Bogue, Clara,	Jamestown.
Bowen, Bertha,	Independence.
Branch, Hazel Elizabeth,	Wichita.
Burke, Ada Cleveland,	Erie.
Burlingame, Carrie M.,	Argentine.
Button, Sherman Blaine,	Valley Falls.
Cannon, Emma,	Lawrence.
Canty, Miles E.,	Buffalo.
Clarke, Katherine F.,	Lawrence.

Coble, Ward Henry,	<i>Kansas City, Mo.</i>
Commons, Clyde,	Devon.
Cornelius, Lillian Mabel,	Nickerson.
Cramer, Fern,	Lawrence.
Crotinger, William,	Bison.
Davis, Eli Seeley,	Lenexa.
Douglas, Richard Le Roy,	Crestline.
Dreibelbis, Lillian A.,	Sabetha.
Driscoll, Jerry E.,	Wilson.
Ducker, Florida Clare,	<i>Joliet, Ill.</i>
Earhart, Birdsey Allen,	Oxford.
Eddy, Bertha,	Lawrence.
Emerick, James Lafayette,	Lawrence.
Epps, Walter Robert,	Pleasanton.
Evans, Esther Preston,	Lawrence.
Fluke, Berneice,	Lawrence.
Fowler, Harry Emerson,	Independence.
Frickelton, Frank Scott,	<i>Joplin, Mo.</i>
Funk, Roy B.,	Iola.
Gano, Maud Virginia,	Great Bend.
Gant, Susanna,	Lawrence.
Gibbens, Leo Thomas,	Kingman.
Gilmore, Charles M.,	Lawrence.
Goforth, Belden Nellie,	Leona.
Grant, Eugene W.,	Emporia.
Greenfield, Myrtle,	Sabetha.
Greenough, Lulu,	Wilson.
Griggs, Adessa,	Lawrence.
Hall, Laura Maude,	Paola.
Hastings, Milo M.,	Effingham.
Hart, Lucretia Wilson,	Hiawatha.
Heald, Helen Theresa,	Onaga.
Hill, Winifred,	Hiawatha.
Hopkins, John Emmett,	Garden City.
Hucke, George Victor,	<i>Kansas City, Mo.</i>
Hughes, Rheua,	Kansas City.
Ise, John Christopher,	Downs.
Kemp, Harry Hibbard,	Lawrence.
Kennedy, Madge,	Fredonia.
Kinne, Elizabeth Pauline,	Moran.
Koehler, Augustine James,	Paola.
Langer, Millie,	Leavenworth.
Leidigh, Lucy Elliott,	Hutchinson.

Little, Clarence W.,	Carbondale.
Lostutter, Frank,	Emporia.
Martin, Josephine,	Garnett.
Mervine, Howard Edward,	<i>Kansas City, Mo.</i>
Miller, Howard Eugene,	Iola.
Milton, Sidney McGarvey,	Lawrence.
Mitchell, Charles William,	Cherryvale.
Moody, Herschel,	Oneida.
Murray, Joseph W.,	Lawrence.
McKnight, Dorothea Janet,	Junction City.
McKelvy, Esther,	Barnes.
Neal, Carolyn Nettie,	Topeka.
Norman, Jane,	<i>Kansas City, Mo.</i>
Norton, Howard,	<i>Kansas City, Mo.</i>
Ogden, James Matthew,	Frederick.
Osborn, Ziazee,	<i>Kansas City, Mo.</i>
Owens, Celia May Daisy,	Lawrence.
Padgett, Frederick Ward,	Fort Scott.
Parker, Frank E.,	<i>Kansas City, Mo.</i>
Parkman, Elizabeth Ellen,	Emporia.
Payne, John Howard,	Kansas City.
Perkins, Margaret,	Lawrence.
Petry, Everett,	Independence.
Poutre, Fred G.,	Greenleaf.
Powell, Charles D.,	Wichita.
Ranney, Fred Turner,	Osawatomie.
Ray, Anna West,	Wichita.
Raymond, Bessie Noyes,	Lawrence.
Richardson, Charlie F.,	<i>Burmah, Okla.</i>
Roberts, Bessie,	Roper.
Root, Burton,	Lincoln.
Rowe, Verna,	Wilson.
Scott, Lester J.,	Mulberry.
Seddon, Arthur Hugh,	<i>Kansas City, Mo.</i>
Smith, Alice Julia,	Lawrence.
Smith, Charles Augustus,	Lawrence.
Starin, William Alfred,	Netawaka.
Stearns, Irwin Henry,	Colwich.
Sutton, Caroline,	<i>Joplin, Mo.</i>
Tague, Edgar Lemuel,	<i>Denver, Colo.</i>
Taylor, Charles B.,	Ness City.
Thompson, Julia M.,	Parsons.
Terrill, Nellie C.,	Lawrence.

Tinder, Ray Harold,	Parsons.
Trekell, Emery,	Wellington.
Trousdale, Lillian May,	Newton.
Turner, M. Alice,	Fort Scott.
Ulm, Elma,	Lawrence.
Valliant, Mabel,	<i>Durango, Colo.</i>
Vernon, Charles Milo,	Emporia.
White, Sara,	Ada.
Wiedemann, Paul Anthony,	Alma.
Winkler, Ada Mariam,	<i>Glenwood, Iowa.</i>
Winston, Alice,	Lawrence.
Withers, Raymond,	Valley Falls.
Wixson, Manley Joseph,	Vining.
Wood, Harley Cortright,	Ness City.
Worden, David Ernest,	Wellington.
Worline, Robert H.,	Peabody.
Yeoman, Orel Don,	Kingman.

Specials, 130.

THE SCHOOL OF ENGINEERING.

SENIORS.

Anderson, Dan S., Min. E.,	Lawrence.
Bailey, Edgar Lawrence, E. E., . . .	Lawrence.
Bohn, Louis J., E. E.,	Troy.
Bramwell, Glenn H., E. E.,	Belleville.
Brock, Frank Peterson, Min. E., . .	Lawrence.
Brown, Andrew R., E. E.,	Scammon.
Busch, Harry, C. E.,	<i>Kansas City, Mo.</i>
Butler, J. Wilson, E. E.,	Ottawa.
Cater, Don, Min. E.,	Lawrence.
Coleman, Bond, Min. E.,	Mound City.
Cone, Victor, Min. E.,	Lawrence.
Coventry, Neil Sherman, Min. E., . .	Fort Scott.
Forter, Samuel, C. E.,	Marysville.
Gallup, Ralph Forney, C. E.,	Blue Rapids.
Hackney, William, C. E.,	Wellington.
Heine, John Farnsworth, E. E., . . .	Fort Scott.
Hopkins, G. Jay, M. E.,	Lawrence.
Klaumann, Charles, Min. E.,	Iola.
Logan, Spencer R., Min. E.,	Cherryvale.
Mackenzie, George Pierce, E. E., . .	Kansas City.
Mann, Arthur R., C. E.,	St. John.
Myers, Ernest Lindley, C. E., . . .	Hutchinson.
McConoughy, David Charles, C. E., .	Atchison.
Neff, Paul J., Min. E.,	<i>Kansas City, Mo.</i>
Nottingham, Avon R., M. E.,	Lawrence.
Noyes, Edward N., C. E.,	<i>St. Joseph, Mo.</i>
Phillips, Frank Dewey, E. E., . . .	Lawrence.
Purton, Astley, C. E.,	Minneapolis.
Reid, Claude, E. E.,	Morrill.
Russell, Claud, C. E.,	Independence.
Russell, Lloyd, C. E.,	Lawrence.
Shuey, Paul F., E. E.,	Lawrence.
Shuey, Ralph, Chem. E.,	Lawrence.
Strode, Robert L., E. E.,	Fort Scott.
Sweezey, Roy, E. E.,	Olivet.
Thorpe, Joel Rex, M. E.,	Merriam.
Whitney, Charles, M. E.,	Girard.
Winning, Robert K., E. E.,	<i>Kansas City, Mo.</i>

JUNIORS.

Adams, D. Stanley, E. E.,	<i>Kansas City, Mo.</i>
Ahlborn, George H., E. E.,	Smith Center.
Barnard, John, C. E.,	Osawatomie.
Barnes, Luther, E. E.,	Lawrence.
Blackmar, Frank H., Min. E.,	<i>Kansas City, Mo.</i>
Bozell, Harold Veatch, E. E.,	<i>Kansas City, Mo.</i>
Broderson, Harry Peter, E. E.,	Lyndon.
Burt, Clarence Leslie, C. E.,	Greensburg.
Campbell, Earl, M. E.,	Kansas City.
Chapin, Charles Walter, C. E.,	Council Grove.
Copley, Everett, E. E.,	<i>Kansas City, Mo.</i>
Corp, Clifford, M. E.,	Hutchinson.
Cortelyou, Frank Morgan, C. E.,	Muscotah.
Coston, Alfred Taylor, E. E.,	Fort Scott.
Coyle, John William, E. E.,	<i>Guthrie, Okla.</i>
Elledge, Harvey Gerald, Min. E.,	McCune.
Ellis, Gwynne Wallace, C. E.,	Pratt.
Farnsworth, Howard Richards, C. E.,	Atchison.
Feagles, Ralph Levi, E. E.,	Buffalo.
Gelwix, Edmund, C. E.,	Thayer.
Gowans, Harry Wilson, M. E.,	Lawrence.
Heter, Wylie, E. E.,	Sterling.
Hunter, Homer, C. E.,	Mitchell.
Johnson, Fred Rudolph, E. E.,	Salina.
Johnson, Herbert L., Chem. E.,	Geneseo.
Knowlton, William J., E. E.,	Iola.
Lee, Benedict, C. E.,	Hutchinson.
Lee, J. Herbert, E. E.,	Ness City.
Miller, Vanroy W., E. E.,	Lawrence.
McClure, Harry Clifford, C. E.,	Cawker City.
McShane, Jesse J., C. E.,	Gardner.
Palmer, Sidney L., E. E.,	Burdett.
Pirschell, William, C. E.,	Holliday.
Pulliam, Leonard, E. E.,	Lyons.
Rankin, Herbert William, Min. E.,	<i>Albuquerque, N. M.</i>
Ridnour, Roy Everett, E. E.,	Emporia.
Rose, Harry J., E. E.,	Atchison.
Russell, Frank A., C. E.,	Peabody.
Smith, Owen, E. E.,	Independence.
Stewart, Ross R., E. E.,	<i>Kansas City, Mo.</i>
Vaughn, Wilton Arthur, C. E.,	Marion.
von Stein, Louis Raymond, E. E.,	Lawrence.

Weith, Archie James, Chem. E., . . .	Iola.
Wellington, Earl J., Chem. E., . . .	Salina.
White, Edward A., M. E.,	Independence.
Wilder, William Jonas, E. E., . . .	Salina.
Wolcott, Walter, E. E.,	Lawrence.
Young, Benjamin Percy, E. E., . . .	Kansas City.

Juniors, 48.

SOPHOMORES.

Ainsworth, Samuel, Min. E.,	Lyons.
Amerman, Melvin R., C. E.,	Iola.
Armsby, Lauren, E. E.,	Council Grove.
Ball, Carl Milton, Min. E.,	Iola.
Bergen, Ralph Howell, Chem. E., . .	Wichita.
Bowser, Cleveland, E. E.,	Columbus.
Brentlinger, John, E. E.,	Columbus.
Brigham, Clare, M. E.,	Belleville.
Bullen, Leslie Marr, C. E.,	<i>Pueblo, Colo.</i>
Card, Benjamin Andrews, E. E., . .	Scott.
Cayot, Claud E., E. E.,	Parsons.
Coleman, Harry Shipp, M. E., . . .	Garnett.
Crummer, Fred, Min. E.,	Belleville.
Dannels, William Henry, E. E., . .	Seneca.
Dassler, J. Carl, E. E.,	Leavenworth.
Day, Lloyd Lippy, M. E.,	Lawrence.
Dodge, Allan Wayne, Min. E., . . .	Salina.
Donald, Prentiss Charles, C. E., . .	La Harpe.
Drennan, Carl Mac, E. E.,	Arkansas City.
Dudley, Chandler, C. E.,	Independence.
Duncan, John, E. E.,	Belleville.
Edgerton, Oliver Paul, C. E., . . .	Randolph.
Edmonds, Walter Ernest, E. E., . .	Lawrence.
Edmonds, Warren Oliver, E. E., . .	Lawrence.
Emmett, William Edwin, C. E., . . .	Lawrence.
Evans, John Corbly, M. E.,	Lawrence.
Fisher, Charles Robert, C. E., . . .	Pittsburg.
Fogwell, Harrison Harry, E. E., . .	Topeka.
Forter, Cecil Alfred, C. E.,	Marysville.
Frichot, Bert Charles, C. E., . . .	Leavenworth.
Gates, Cecil Horatio, jr., C. E., . .	Rosedale.
Glaze, Frank Wyant, C. E.,	Lyons.
Groesbeck, Arthur Jerome, E. E., . .	Blue Rapids.
Hambleton, Thomas, E. E.,	Herington.
Harvey, Leslie J., E. E.,	Salina.

Haskins, Charles Arthur, C. E., . . .	Kingman.
Hausman, Isaac, C. E.,	Marysville.
Henderson, William Simpson, C. E., .	Leavenworth.
Hennessy, Benedict, C. E.,	Fulton.
Hillabrant, John W., C. E.,	Washington.
Hoar, Charles Park, C. E.,	Lawrence.
Horton, Clyde, E. E.,	Sterling.
Houghton, Albin Jonas, E. E., . . .	Cottonwood Falls.
Johnson, Charles Edward, M. E., . .	Lawrence.
Johntz, Albert Frederick, C. E., . . .	Abilene.
Johntz, Harry Herbert, C. E., . . .	Abilene.
Jones, Ray, E. E.,	Leavenworth.
Kackley, Walter John, C. E.,	Parsons.
Keller, John Elmer, E. E.,	Independence.
Kent, Robert, Chem. E.,	Lawrence.
King, Thomas Phillips, E. E., . . .	Minneapolis.
Lindsey, James David, C. E.,	Osawatomie.
Linton, William M., C. E.,	Lawrence.
Liston, Roy, C. E.,	Altamont.
Lusk, Charles Winslow, C. E., . . .	Galena.
Luther, Herbert Lawrence, M. E., . .	Lawrence.
Mead, Forrest Dearborn, C. E., . . .	Beloit.
Merwin, John Milton, M. E.,	Lawrence.
Miller, Henry H., C. E.,	Fort Scott.
Morris, Glen S., E. E.,	Eureka.
McClurg, John Guy, C. E.,	Valley Falls.
McCully, Harry Hemphill, C. E., . .	Broughton.
McCune, George Addison, C. E., . . .	Leavenworth.
McGeorge, William Thomas, Chem. E.,	Argentine.
Nevinger, Daniel, E. E.,	Columbus.
Nixon, Henry L., E. E.,	<i>Kansas City, Mo.</i>
Oldroyd, Harry, E. E.,	Arkansas City.
Orr, Robert E., E. E.,	Winfield.
Parmelee, Paul Ross, E. E.,	Topeka.
Perkins, Clement Dudley, C. E., . . .	Lawrence.
Pleasant, Carl, M. E.,	Lyndon.
Pratt, Fred Cameron, M. E.,	<i>Webb City, Mo.</i>
Pratt, Wallace, Min. E.,	Phillipsburg.
Priest, Richard Newton, C. E., . . .	Chanute.
Rea, Fred I., E. E.,	Hiawatha.
Riste, Roy Baringer, C. E.,	Norton.
Rouse, Carl Everett, C. E.,	Beloit.
Shields, William Glenn, M. E., . . .	Wichita.

Sigler, Elmer, C. E.,	Kansas City.
Sippy, Walter, E. E.,	Belle Plaine.
Skofstad, Martin Ernest, C. E.,	Lawrence.
Smith, Harris B., Min. E.,	Lawrence.
Stegeman, Amel, C. E.,	Hope.
Taylor, Harry James, C. E.,	Larned.
Thiele, Ernest J., E. E.,	Washington.
Thiele, William Fred, E. E.,	Hanover.
Tredick, George Chester, E. E.,	Kingman.
Tripp, Ray Gifford, C. E.,	Herington.
Trowbridge, Carl Boyd, Min. E.,	Argentine.
Tufts, John Marshall, C. E.,	Atchison.
Veatch, N. Thomas, C. E.,	Atchison.
Walker, Roy Melvin, M. E.,	Sabetha.
Welsh, Charles Robert, E. E.,	Clifton.
Wherry, Lindley, Min. E.,	Lawrence.
Williamson, Arthur Vaughn, C. E.,	Pittsburg.
Winter, Fred Hill, E. E.,	Lecompton.

Sophomores, 96.

FRESHMEN.

Ahlers, Johannes,	<i>New York, N. Y.</i>
Ahrens, Henry Denton,	Paola.
Allen, William Curtis,	Wichita.
Armstrong, Frank Logan,	Lawrence.
Armstrong, Harold Elwood,	Greenleaf.
Arthur, Frank Caddan,	Galena.
Aspinall, Robert Frederic,	Iola.
Atkinson, Paul Sherwood,	Lawrence.
Ayer, Raymond Cecil,	Dodge City.
Ballard, Herbert Clytus,	Nickerson.
Balocca, Fred,	Osage City.
Barkley, John Fred,	Chanute.
Barrell, Fred,	Lawrence.
Barrett, Fred Spencer,	Westmoreland.
Barry, Raymond Adelbert,	Lawrence.
Beall, Arthur Floyd,	Lawrence.
Beck, Edward Paul,	Pratt.
Beck, Henry Theodore,	Gypsum.
Bigelow, Roy,	Lawrence.
Black, Earl Tennyson,	Baldwin.
Boerner, Oscar Crist,	Colby.
Bower, Noble,	Winfield.
Boyle, Carl Sherwin,	Emporia.

Boynton, Charles Otis,	Kansas City.
Brackman, William,	Carbondale.
Brown, Jesse Fred,	Westmoreland.
Buckner, Dean,	Topeka.
Buehner, Edward Carl,	<i>Higginsville, Mo.</i>
Burkholder, Joseph L.,	Harper.
Burkholder, William Arthur,	McPherson.
Burnham, Walter Clinton,	Wa Keeney.
Burtch, Thomas Wendell,	Hutchinson.
Burton, Ansel M.,	Neodesha.
Busby, Roy Cleveland,	<i>So. McAlester, Okla.</i>
Bush, Lee Marshal,	Burlingame.
Cain, John Milton,	Atchison.
Caldwell, William,	Geneseo.
Calkin, Bert H.,	Herington.
Campbell, Carl Howard,	Lyndon.
Carlisle, William Armitage,	Atchison.
Carman, Thomas Michael,	Seneca.
Carpenter, John McMurray,	Girard.
Cassell, Harry Lee,	Fort Scott.
Chapman, Charles Sumner,	Pittsburg.
Chapple, Ira,	Troy.
Chivens, Bert Earl,	<i>Cameron, Mo.</i>
Clawson, Bunnie F.,	Wamego.
Clugston, John,	Topeka.
Cook, John,	Scranton.
Coors, William Frederick,	Howard.
Cowan, Herbert Melvin,	Abilene.
Crawley, David, jr.,	<i>Sullivan, Ind.</i>
Cross, Glen,	Wichita.
Crowley, Marwood Harrison,	Lawrence.
Cummins, Andrew Adair,	Wichita.
Dahlene, Oscar,	Lawrence.
De Lapp, Verner Victor,	Cherokee.
Devlin, Francis Edwin,	Newton.
Dolman, Samuel Grove,	Topeka.
Dougherty, James Wilfred,	Cawker City.
Duckworth, Albert,	Garden City.
Ellis, Herbert A.,	Pratt.
Emery, George Valentine,	Wetmore.
English, Arthur,	Hiawatha.
Fairchild, Fred Postlewait,	Ellsworth.
Farber, Elbert,	Hoxie.

Ford, Arthur Woodfin,	Lawrence.
Foster, Harold William,	Lawrence.
Foster, Vernon Simons,	Parsons.
Fox, Morton Clyde,	Russell.
Freiburghouse, Edward,	Hiawatha.
Fruit, Roy Lee,	Cherryvale.
Fuller, Adelbert de Forrest,	Argentine.
Furst, Clifford D.,	Peabody.
Gammon, James R.,	<i>Independence, Mo.</i>
Garrett, Clarence,	Lawrence.
Garver, John Diller,	Topeka.
Gee, Claude Earl,	Lawrence.
Gill, Willis Scott,	Harper.
Gilmore, Walter Ellsworth,	El Dorado.
Graves, Henry D.,	Lincoln.
Greene, Gordon Earle,	Solomon.
Gregory, Roy Milton,	White Church.
Griffin, Wylie Reed,	Ellis.
Griggs, Frank Wellington,	Topeka.
Hackman, Robert George,	Lawrence.
Hammond, Robert Hugh,	Independence.
Harvey, Arthur,	Salina.
Hayworth, Donald Irving,	Wichita.
Hill, Martin Dwight,	Lawrence.
Hoadley, Herbert Eugene,	Fort Scott.
Hoffman, Aloysius Marcell,	Parsons.
Hoffman, Charles,	Elmo.
Hoisington, Edward Gregory,	Newton.
Hollingsworth, Horace Wright,	Leavenworth.
Holmes, Willard Coit,	<i>Kansas City, Mo.</i>
Howe, Samuel Washburn,	Belleville.
Hunt, Paul Switzer,	El Dorado.
Hurt, Leon Jefferson,	Chanute.
James, Llewellyn Edward,	<i>Kansas City, Mo.</i>
Jennings, Claude Stuart,	<i>Kansas City, Mo.</i>
Jennings, Earl Willis,	Clay Center.
Johnson, Thomas William,	Lawrence.
Jones, Charles Irving,	Leavenworth.
Jones, Chester Holmes,	Topeka.
Jones, Jacob Oscar,	Barrett.
Jonte, John Herbert,	Parsons.
Junkin, John Evans, jr.,	Sterling.
Kilian, Karl Walter,	Junction City.

Kingsbury, William Frank,	Lawrence.
Kuns, Frank,	McPherson.
Laughlin, James Lyman,	<i>Kansas City, Mo.</i>
Learned, Albert Preisach,	Lawrence.
Lednický, Victor Englebert,	Everest.
Leland, Cyrus Austin,	El Dorado.
Leppelman, Earl Maurice,	Augusta.
Leslie, Mattison Douglas,	<i>Ballinger, Tex.</i>
Lewis, Harry Hayden,	Topeka.
Lohmann, August Wilhelm,	Sedan.
Loomis, Alexander Campbell,	Topeka.
Loreditsch, Clarence Joseph,	Hays.
Love, Frank Austin, jr.,	Arkansas City.
Lynch, Frank Curtis,	Cherryvale.
Mann, George Spencer,	Rosedale.
March, Robert Collamer,	Topeka.
Mead, Forrest Dearborn,	Beloit.
Means, Boyd Irwin,	Arkansas City.
Meath, Francis Joseph,	Humboldt.
Moffett, Fred Carl,	Iola.
Moon, Clare Ellery,	Cottonwood Falls.
Morgan, John Francis,	Sylvan Grove.
McCanles, John Charles,	Lincoln.
McCleery, John C.,	St. Marys.
McClure, Harry Clifford,	Cawker City.
McCoy, Curtis J.,	Hiawatha.
McCoy, Jay,	Solomon.
Naylor, Charles,	Yates Center.
Neal, George Alfred, jr.,	<i>Kansas City, Mo.</i>
Newcomb, Rexford,	Burlington.
Newland, Joseph,	Hoxie.
Nothstein, Raymond Arnold,	Burlington.
Noyes, Robert Franklin,	Troy.
Nystrom, Clifford William,	Topeka.
Ollis, William Herbert,	<i>Kansas City, Mo.</i>
Osborn, Fred P.,	Howard.
Osmond, Lawrence,	Great Bend.
Parrish, Rey Claude,	Ottawa.
Paul, Clyde David,	Augusta.
Penniman, James Brown,	Fort Scott.
Perry, William Coulling, jr.,	<i>Kansas City, Mo.</i>
Peterson, Christian A.,	Greenleaf.
Poe, Charles Roy,	Lawrence.

Pohlman, Carl Lantz,	Ellsworth.
Pond, Harold Whiting,	<i>Milton, Mass.</i>
Purton, Thomas Anthony,	Minneapolis.
Quiring, Walter Otto,	Newton.
Radcliffe, Howard,	Frankfort.
Randall, Howard Mansfield,	Newton.
Randolph, Carl Lowell,	Cherryvale.
Rauch, Le Roy,	Topeka.
Reding, Henry Warren,	Sabetha.
Reuter, William Gotlieb,	Topeka.
Richter, Alfred,	Kansas City.
Riney, Arthur Herbert,	Dodge City.
Rishel, Arthur M.,	Pittsburg.
Roberts, Elmore,	Howard.
Robinson, Eph Eston,	Lawrence.
Robinson, Sylvester,	Topeka.
Rockefeller, Victor Earl,	Holton.
Rowlands, Robert John,	Lawrence.
Rubio, Oswaldo,	<i>Camaguey, Cuba.</i>
Ruggles, Glenn A.,	Marysville.
Ruth, Herman Albert,	Moundridge.
Ryan, Joseph Lacy,	Hays.
Saunders, George Clayton,	Phillipsburg.
Saurenmann, Jacob Gilmore,	<i>Rawlins, Wyo.</i>
Scamell, Ralph Eugene,	Atchison.
Schnacke, Austin Davis,	McPherson.
Scott, Lester J.,	Mulberry.
Senseman, William Burgess,	Harper.
Shaffer, Joseph Frank,	Chetopa.
Sherman, Carl,	Salina.
Shinn, Clay Bride,	Ottawa.
Shippy, Harvey,	Chapman.
Shotts, Timothy Ward,	La Crosse.
Singleton, Rex B.,	Benedict.
Sipple, Caleb Boyer,	Sedan.
Smith, Edgar,	Pittsburg.
Smith, Frank Edwin,	Sterling.
Smithmeyer, Fred Poehler,	Lawrence.
Spear, Roy Elbert,	Wellington.
Stanley, Lloyd Lawrence,	Lawrence.
Steele, Clarence Rufus,	<i>Kingfisher, Okla.</i>
Stephenson, Thomas Jefferson,	Holton.
Stevenson, Arnie R.,	Belleville.

Stevenson, Harry Burdette,	<i>Parkville, Mo.</i>
Stocks, Brainerd Rae,	Garden City.
Teeter, Carroll Ethelbert,	Lawrence.
Thomas, Ralph Burgess,	Galena.
Thompson, William Rodney,	Howard.
Tucker, Peter H.,	Kansas City.
Tyler, Donald Marsh,	Junction City.
Tyler, Jo,	Lawrence.
Waddell, Charles C.,	Wichita.
Wagenknecht, Harry,	Wathena.
Walker, Lester Carl,	Mankato.
Wall, George D.,	Lawrence.
Wardin, Harry Hutton,	Topeka.
Waring, Clarence,	Abilene.
Weith, George Stephen,	La Harpe.
Whitcomb, Clarence,	Council Grove.
Wick, Ray,	Detroit.
Wiedemann, Otto Jackson,	El Dorado.
Wilson, Theodore Du Bois,	Fort Riley.
Wilson, France Q.,	Abilene.
Wood, Clayton Vaughn,	Burlingame.
Wright, Claude Waldo,	Iola.

Freshmen, 217.

SPECIALS.

Brownlee, Oscar,	Lawrence.
Jones, Francis Rea,	Leavenworth.
Kaufman, Richard Glenn,	Hutchinson.
Morse, Orlin Raymond,	Mound City.
McKnight, George William,	Junction City.
Noyes, Bertha,	<i>St. Joseph, Mo.</i>
Patchejieff, B. J.,	<i>Sophia, Bulgaria.</i>
Pringle, Merle Blaine,	Lawrence.
Romig, Benjamin B.,	Ottawa.
Stewart, Oran,	Leavenworth.
Stuart, Walter Tuller,	Lawrence.
Williams, Kersey G.,	Kansas City.

Specials, 12.

UNCLASSSED.

Bales, John Frank,	Colby.
Blades, James,	Minneapolis.
Hetherington, Harry Hale,	Atchison.
Watson, John Rudolph,	Wichita.
Weibel, Ernest,	Lawrence.

Unclassed, 5.

THE SCHOOL OF FINE ARTS.

GRADUATES.

Bell, Mrs. Olin,	Lawrence.
Nungesser, Ella,	Lawrence.
Sweeney, Anna Louise,	Lawrence.
Wiedemann, Louise,	Lawrence.

Graduates, 4.

SENIORS.

Bauman, Helen,	Neodesha.
Bonar, Katherine,	Lawrence.
Cullers, Gertrude Estelle,	Scandia.
Fitch, Louise,	Lawrence.
Hodgson, Charlotte M.,	Lawrence.
McNaughton, Lucile,	Tonganoxie.
Waters, Miriam Rose,	Bonner Springs.

Seniors, 7.

JUNIORS.

Arbuthnot, Lulu,	Belleville.
Bowden, Bessie,	Lawrence.
Clevenger, Elda Babbett,	Lawrence.
Cross, Viah Mae,	Johnson.
Garrett, Mayme Adelaide,	Lawrence.
Garvin, Daisy D.,	Lawrence.
Gebhart, Henrietta,	Phillipsburg.
Houlton, Frances,	Garden City.
Ise, John,	Downs.
Perkins, Margaret Louise,	Lawrence.
Reynolds, Grace Josephine,	Lawrence.
Reynolds, Kate,	Clay Center.

Juniors, 12.

SOPHOMORES.

Anderson, Charlotte L.,	Chetopa.
Clark, Maude Lucille,	Fredonia.
Eggleston, Bessie Le Baron,	Pratt.
Ellis, Pearl,	El Dorado.
Fowler, Harry Emerson,	Independence.
Hester, Nina May,	Lawrence.
Kilworth, Bertha Belle,	Lawrence.
Krone, Lucile E.,	Independence.
Shaler, Ethel Sarah,	Lawrence.

Warner, Grace,	Garden City.
Weidlein, Verna M.,	Augusta.
Whitman, Meriel,	Lawrence.

Sophomores, 12.

FRESHMEN.

Andrews, Kate,	Lawrence.
Barkdull, Blanche Anne,	Lawrence.
Bennett, Evelyn Joella,	Seneca.
Burrows, Zelta,	Halstead.
Caldwell, Kate,	Lawrence.
Carpenter, Gertrude Irene,	Girard.
Carstensen, Louise Gretchen,	Belleville.
Carter, Ledrue,	Lawrence.
Cone, Margaret,	Lawrence.
Cooper, Gertrude Helen,	Lawrence.
Cornelius, Lillian Mabel,	Nickerson.
Cosby, Mayme Aurelia,	Farmington.
Crowder, Litta Clarice,	Caldwell.
Davies, Sophia,	Lebo.
Davis, Nellie Maria,	Eudora.
Edgerton, Lyla Della,	Randolph.
Emley, Pearl Agnes,	Great Bend.
Gano, Maud Virginia,	Great Bend.
Gilmore, Mary E.,	El Dorado.
Greenough, Lulu,	Wilson.
Grover, Georgia Maude,	Onaga.
Harper, Jessie,	Leona.
Harris, Hazel,	Great Bend.
Hart, Katy,	Fort Scott.
Houston, Mary Louise,	Garnett.
Hughes, Rheua,	Kansas City.
Irvine, Katherine,	Lawrence.
Johnson, Jamesina Clark,	Topeka.
Kinne, Elizabeth,	Moran.
Lewis, Vinnie,	Yates Center.
Loggins, Mary Ella,	Seneca.
Losey, Portia,	Lawrence.
Loucks, Elsie Edith,	Lawrence.
Marshall, Lydia,	Lincoln.
Moses, Lillian Alice,	Great Bend.
Myers, Martha Fishburne,	Lawrence.
McKnight, Dorothea Janet,	Junction City.
Oshant, Henrietta Rose,	Hays.

Purdy, Jennie Corita,	Chanute.
Parkman, Elizabeth Ellen,	Emporia.
Pendleton, Laura,	Lawrence.
Richeson, Hazel May,	Lawrence.
Ridenour, Lenna,	Emporia.
Rowe, Verna Jean,	Wilson.
Russ, Gertrude Elizabeth,	Lawrence.
Sipple, Martha Madge,	Sedan.
Sloan, Herbert Adams,	<i>Kansas City, Mo.</i>
Sterns, Minnehaha,	Hiawatha.
Ward, Mary Bernice,	Belleville.
Williams, Effie,	Lawrence.
Wolfe, Amy Emma,	Frankfort.

Freshmen, 51.

SPECIALS.

Asher, Henry H.,	Lawrence.
Bailey, Lois Maurine,	Lawrence.
Barkdull, Charles,	Lawrence.
Barry, Bernese L.,	Lawrence.
Bass, Mary Lenore,	McPherson.
Benjamin, Vera Ethel,	Salina.
Bernhard, Lillie,	Lawrence.
Bernhard, Rillie,	Lawrence.
Blair, Alice,	Lawrence.
Bowen, Bertha,	Independence.
Brown, Mattie,	<i>Kansas City, Mo.</i>
Burtis, Mrs. Lulu J.,	Waterville.
Burtis, Harry James,	Waterville.
Bussing, Alfa F.,	Lawrence.
Butler, Eva,	Lawrence.
Charlton, Glenn Edwin,	Lawrence.
Childers, Nellie Melissa,	Sedan.
Clark, Kate C.,	Lawrence.
Clark, Mary Francis,	<i>St. Joseph, Mo.</i>
Cone, Edna,	Lawrence.
Copley, Everett,	<i>Kansas City, Mo.</i>
Cooke, Maude,	Lawrence.
Dalton, Mrs. B. J.,	Lawrence.
Dalton, Beatrice,	Lawrence.
Dalton, William B.,	Lawrence.
Dick, Mabel Blanche,	Lawrence.
Dinsmoor, Frances,	Lawrence.
Dreibelbis, Lillian A.,	Sabetha.

Edmonds, Letha May,	Lawrence.
Epley, Ernest N.,	Lawrence.
Fox, Shirley,	Lawrence.
Gant, Susanna,	Lawrence.
Garrett, Clyda,	Lawrence.
Gatlin, Dorothy Madge,	Paola.
Gill, Mabel Ruth,	Clyde.
Gleed, Mary Elizabeth,	Topeka.
Goforth, Belden Nellie,	Leona.
Gray, John Yale,	Lawrence.
Gregory, Marguerite Electa,	Lawrence.
Grimes, Thayer William,	<i>Guthrie, Okla.</i>
Hase, Clara Augusta,	Lawrence.
Healey, Florence,	Lawrence.
Hiatt, Ila Patti,	Lawrence.
Hoisington, Helen,	Newton.
Keith, M. Helen,	Lawrence.
Kennedy, Madge,	Fredonia.
Kroenert, Violet Catherine,	Arkansas City.
Lee, Bernard T.,	Hutchinson.
Leidigh, Ruth Elizabeth,	Hutchinson.
Long, Octavia,	Lawrence.
Maris, Mary Avis,	Cloverdale.
Melgren, Selma,	Osage City.
Miller, George H.,	Mahaska.
Mitchell, Hannah,	Lawrence.
Morin, Mary Maud,	Williamstown.
Murphy, Alice,	Lawrence.
Murphy, Gertrude,	Lawrence.
McCheyne, Muriel,	<i>Kansas City, Mo.</i>
Naramore, Archie,	Herington.
Page, Willard James,	Whiting.
Parkhurst, Jean,	<i>Kansas City, Mo.</i>
Passon, Rebecca,	Lawrence.
Pettingill, Anne,	Linwood.
Powers, John,	Lawrence.
Radford, Earle Korfhage,	<i>Kansas City, Mo.</i>
Riggs, Kate,	Lawrence.
Riley, Juanita,	Home City.
Robinson, Hattie,	<i>Kansas City, Mo.</i>
Roff, Juliette,	Newton.
Rowlands, Robert,	Lawrence.
Rutledge, Lyman V.,	<i>Alva, Okla.</i>

Scammon, Richard,	Lawrence.
Schleifer, Zana,	Lawrence.
Sellards, Minnie Mae,	Lawrence.
Smith, Alice,	Lawrence.
Smith, Anna,	Lawrence.
Smithmeyer, Fred,	Lawrence.
Sterling, Eugenie,	Lawrence.
Sutton, Caroline,	Joplin, Mo.
Tuthill, Herbert,	Kansas City, Mo.
Uhrlaub, Agnes,	Lawrence.
Unthanks, Georgia,	Lawrence.
Walton, J. G.,	Edwardsville.
Weitzenkorn, Dora,	Lawrence.
Willis, Edith,	Lawrence.
Willis, Susie Emily,	Lawrence.
Woodward, Eva,	Lawrence.

Specials, 87.

THE SCHOOL OF LAW.

SENIORS.

Alexander, Summerfield Still, . . .	Medicine Lodge.
Atkinson, Clarence K., . . .	Arkansas City.
Bailey, Clare A., . . .	Mankato.
Bloss, Alva Lee, . . .	Clay Center.
Brett, John Fred, . . .	Iola.
Brookens, Elgie Clifford, . . .	Harlan.
Brown, John William, . . .	Neodesha.
Canty, Miles E., . . .	Buffalo.
Davis, Charles Henry, . . .	Marysville.
Detrick, Erve Orion, . . .	Erie.
Dunn, Fred S., . . .	Garden City.
Hartley, Oscar B., . . .	Lyndon.
Johnson, Nelson E., . . .	Kansas City.
Kimball, Paul H., . . .	Parsons.
Lebrecht, Hal R., . . .	<i>Kansas City, Mo.</i>
Lomax, Sullivan, . . .	Independence.
Luckey, William J., . . .	Greenleaf.
Martin, Charles Irving, . . .	Fort Scott.
Martin, Ida, . . .	Fort Scott.
Merrill, Frank J., . . .	Paola.
Montgomery, William, . . .	Topeka.
McDonald, Walter Edward, . . .	Kansas City.
McVey, Walter, . . .	Independence.
Nevitt, Oak Dale, . . .	Oxford.
Orr, George Glick, . . .	Atchison.
Petry, Everett, . . .	Independence.
Powell, Charles, . . .	Wichita.
Richardson, Jay H., . . .	<i>St. Joseph, Mo.</i>
Smith, Solon W., . . .	Stockton.
Souders, Clyde E., . . .	Cheney.
Spencer, Clifton Allen, . . .	Russell Springs.
Taylor, James S., . . .	Lawrence.
Taylor, Thomas Chalmers, . . .	Lawrence.
Varney, Herbert Hadden, . . .	Kansas City.
White, Jesse Ruskin, . . .	Mankato.
Wildman, Roy Taylor, . . .	Lawrence.

MIDDLES.

Adams, Clyde,	Topeka.
Blackmar, Charles Maxwell,	<i>Kansas City, Mo.</i>
Cohn, Julius,	Fort Scott.
Cook, Calvin George,	Lorraine.
Countryman, Thomas Franklin, . . .	Wa Keeney.
Dennis, Clarence Glenn,	Seneca.
Douglas, William,	Cherryvale.
Earhart, Birdsey A.,	Oxford.
Eaton, Hyden Jay,	Kansas City.
Eddy, William Edward,	Abilene.
Finkle, Ellsworth Weaver,	Galva.
Gander, Gilbert M.,	Baldwin.
Gaskill, Harry Andrew,	Ottawa.
Hoefler, Oscar H.,	<i>Higginsville, Mo.</i>
Johnson, Carlos Irwin,	Arkansas City.
Jones, John Paul,	Kansas City.
Kirmayer, Carl,	Leavenworth.
Lamb, Ray Arnott,	Yates Center.
Landon, Alfred M.,	Independence.
Little, Clarence,	Carbondale.
Martin, Fred Oscar,	Altamont.
Moore, Louis Howell,	Fort Scott.
O'Brien, Oscar Lawrence,	Independence.
Randall, Harry,	Salina.
Smith, D. Glick,	Girard.
Souders, Otto,	Cheney.
Spangler, Adolph James,	Lawrence.
Stryker, Jacob Lowe,	Fredonia.
Sullivan, Albert M.,	Louisville.
Tinder, Ray Harold,	Parsons.
Wallace, Clyde Austin,	<i>Ponca City, Okla.</i>
Walmer, Sadie,	Merriam.
Worrell, Bertram Talkington, . . .	Holton.

Middles, 33.

JUNIORS.

Anderson, R. Stanley,	Topeka.
Atwood, James H.,	Sibley.
Barnes, Edgar Rankin,	Blue Mound.
Bayless, Frederic Willis,	Branson.
Brady, Albert Neville,	<i>St. Joseph, Mo.</i>
Brown, Walter Eugene,	Holton.
Brunjes, Ernest August,	Walnut.

Brunner, Emile M.,	Onaga.
Burke, William Jennings,	Rosedale.
Burress, Millard Slocum,	Troy.
Butler Russell Earl, jr.,	Baldwin.
Cannon, Leroy Thomas,	Cunningham.
Carlson, John Edward,	Kansas City.
Carroll, Charles Louis,	Great Bend.
Chambers, Oscar D.,	Lowell.
Chaplin, William Byron,	Emporia.
Chapman, Clifford Frank,	<i>Perry, Okla.</i>
Cochran, Azel F.,	Plainville.
Coughlin, Edward Henry,	Edgerton.
Coughlin, Robert Emmett,	Edgerton.
Coulter, Edwin,	Pittsburg.
Cox, Roy Arminius,	Augusta.
Craig, Clarence,	<i>Joplin, Mo.</i>
Crowell, George F.,	Attica.
Doubleday, Floyd Egbert,	Lawrence.
Douglas, Richard Leroy,	Crestline.
Drake, Frank, jr.,	Lawrence.
Ellis, Frank Hale,	<i>Kansas City, Mo.</i>
Ferguson, Winfield Bertram,	Kansas City.
Fisher, Hugh Thomas,	Baldwin.
Fleming, John Austin,	Buffalo.
Fletcher, Clifton Pliny,	Kansas City.
Flowers, William Burnett,	Culver.
Forbes, Benjamin N., jr.,	Wathena.
Ford, Frank H.,	Lawrence.
Fortney, Frederick Perry,	Chanute.
Gibbs, George Nelson,	Oskaloosa.
Gowenlock, Thomas Russell,	Clay Center.
Grant, Eugene Winfield,	Emporia.
Grant, Frank Richard,	Ellinwood.
Groene, Merle Carlisle,	Kansas City.
Hackett, John Louis,	<i>Fort Dodge, Iowa.</i>
Harris, Montgomery,	Lawrence.
Hocker, Clarence McElroy,	<i>Tulsa, Okla.</i>
Hopkins, John Emmett,	Garden City.
Ise, Charles Daniel,	Downs.
Ivie, C. Carl,	<i>Webb City, Mo.</i>
Jennings, James Thomas,	Nickerson.
Johnson, Harry Clinton,	Dwight.
Jones, Ben L.,	Coffeyville.

Kimball, Charles Webster,	Parsons.
Langley, Frank,	Olpe.
Lucas, Asa Walter,	Admire.
Lyon, Fred Masters,	Hillsdale.
Mallom, Ellis,	Pittsburg.
Manley, Lester Bryant,	Junction City.
Mann, Albert Alexander,	Lawrence.
Marshall, Daniel Benjamin,	Lawrence.
Michaels, Roy,	Horton.
Mitchell, Charles William,	Cherryvale.
McCorkle, Jesse Elmer,	Holton.
Ogden, James Matthew,	Frederick.
Parker, Frank Everett,	<i>Kansas City, Mo.</i>
Pearson, Ridley Stillson,	Merriam.
Pendleton, William Henley,	Lawrence.
Pierson, Jesse Verne,	Frankfort.
Porter, George Alexander,	Holton.
Prout, Mearle E.,	Morland.
Quin, John Chenoweth,	Ottawa.
Quinn, John Alfred,	Santa Fe.
Reed, Howard C.,	Kansas City.
Rice, William E.,	Topeka.
Russell, Earl Paul,	Paola.
Schmidt, Carl,	Lincoln.
Scott, John Winfield,	Lawrence.
Simminger, Jacob H.,	Atwood.
Smith, John T.,	Chautauqua.
Stearns, Irwin Henry,	Colwich.
Thomas, Clive Elmer,	<i>Geary, Okla.</i>
Thompson, Horton Franklin,	Horton.
Vigg, Sandor James,	<i>Alva, Okla.</i>
Wall, Paul Jean,	Wichita.
Wasson, Roscoe Conkling,	Kansas City.
Wood, Harley Cortright,	Ness City.

Juniors, 84.

SPECIALS.

Allendoerfer, Maurice,	Concordia.
Buck, James Wallace,	Wichita.
Carter, Eugene Lamar,	Lawrence.
Childress, John Martin,	Lawrence.
Conard, Edward Cooper,	Coffeyville.
Funk, Roy,	Iola.
Gardiner, P. Dudley,	Wichita.

Gibbens, Leo Thomas,	Kingman.
McWilliams, Samuel James,	Fort Scott.
Parsons, John Robert,	Collyer.
Relihan, Arthur,	Smith Center.
Smith, Charles Watson,	Lincoln.
Taylor, Charles B.,	Ness City.

Specials, 13.

THE SCHOOL OF PHARMACY.

SENIORS.

Allen, David Leigham,	Princeton.
Bennett, Thomas Le Roy,	Weir.
Brown, Edward Roy,	Duquoin.
Dowis, Albert J.,	Lawrence.
Epps, Walter Robert,	Pleasanton.
Kemp, Walter Dewitt,	Lawrence.
Lee, Bernard,	Hutchinson.
Lesley, William Amos,	Culver.
Makinson, William Omer,	Cedarville.
Middlekauff, Casper,	Hays.
Overman, Chauncey Irving,	Lawrence.
Richardson, Evan Hart,	Havensville.
Teeter, Lawrence,	Lawrence.
Tully, William Lee,	Burlington.
Walkenwitz, Charles Louis,	Leavenworth.
Wiedemann, Paul Anthony,	Alma.
Womer, Retta,	Bellaire.
Zeman, Dell Frank,	Wilson.

Seniors, 18.

JUNIORS.

Adamson, Claude E.,	Valley Center.
Allison, Earl M.,	Stockton.
Arbuthnot, Clyde Park,	Cherryvale.
Ashley, Clyde Delbert,	Nickerson.
Baldwin, Frank C.,	Hutchinson.
Ballard, Volney Birney,	Nickerson.
Berges, Louis,	Onaga.
Bissantz, Oscar Rudolph,	Wichita.
Bixby, Louis Edmund,	McPherson.
Butler, Joseph Aloysius,	Topeka.
Campbell, Wilmer Amurma,	Kansas City.
Cordell, Frank Albert,	Edgerton.
Dimond, Merrill Ray,	Smith Center.
Elliott, James William,	Emporia.
Evans, Arthur,	Williamstown.
Farnsworth, Austin Howard,	Douglass.
Fritsche, Edward Renz,	Leavenworth.

Gant, Edward Albert,	St. John.
Granlund, Sophia V.,	Logan.
Green, Frederick A.,	Atchison.
Green, Wendell,	Kansas City.
Hampshire, Hiel Bonebrake,	Overbrook.
Harris, Charles Ashland,	Lawrence.
Harvell, William Samuel,	Independence.
Herold, Albert Henry,	Ellinwood.
Hill, Frank Mulford,	Lawrence.
Holmes, Clarence E.,	Douglass.
Jennings, Edward Burnis,	Kansas City.
Kasey, Hugh Fields,	McPherson.
Martin, Tulley Bushnell,	Arkansas City.
Maxwell, Horace E.,	Robinson.
Moores, Archie Lester,	Lawrence.
Morris, Jack,	Marquette.
McClelland, Marshall Lincoln,	Cherryvale.
Nite, Samuel Houston,	Eminence.
Noll, M. Robert,	Atchison.
Norris, Jack I.,	Marquette.
Osborn, John Lynn,	Baldwin.
Robbins, Leroy,	Arkansas City.
Searles, Joseph,	Wetmore.
Shipley, Grant W.,	Neodesha.
Smith, James Alfred,	Cherryvale.
Taylor, James Bennett,	Ottawa.
Teague, Otto Leroy,	Robinson.
Terrill, Rollie B.,	Robinson.
Tompkins, Monroe, jr.,	Lawrence.
Townley, Wayne D.,	Enterprise.
Urban, James Charles,	<i>Kingfisher, Okla.</i>
Walker, Ray Edward,	Minneapolis.
Warner, William Clyde,	Burlingame.
Williams, Kate,	Lawrence.
Wilson, James Radcliffe,	Chanute.
York, James Robert,	Cunningham.

Juniors, 53.

SPECIALS.

Duncan, George Howard,	Jetmore.
Frey, Karl,	<i>Las Animas, Colo.</i>
Welsh, Joseph Earl,	Chanute.

Specials, 3.

THE SCHOOL OF MEDICINE.

GRADUATES.

Lowry, Joseph D., M. D.,	<i>Kansas City, Mo.</i>
Bowman, Dora E., M. D.,	<i>Kansas City, Mo.</i>

Graduates, 2.

FOURTH YEAR.

Barker, Frederick Calaway,	<i>Crescent, Okla.</i>
Blachly, Charles Dallas, B. S.,	<i>Leonardville.</i>
Case, Claude Huston,	<i>Kansas City.</i>
Clendening, Logan,	<i>Kansas City, Mo.</i>
Fisher, Lewis Shepard,	<i>Merriam.</i>
Fox, Raymond H.,	<i>Caldwell.</i>
Francisco, Clarence B.,	<i>Lawrence.</i>
Gibson, Charles M., A. B.,	<i>Pittsburg.</i>
Gray, Albert Newton,	<i>McPherson.</i>
Henderson, Edward E.,	<i>Centerville, Iowa.</i>
Iliff, Winfred Harold,	<i>Kansas City.</i>
Kiehl, Otto B.,	<i>Weir.</i>
Lemmon, Henson Bowling, jr.,	<i>Kansas City.</i>
McBurney, Chas. Hamilton,	<i>Custer City, Okla.</i>
McDermott, Joseph Lewis, B. S.,	<i>Kansas City.</i>
McKeehan, Lyman Prentice,	<i>Kansas City.</i>
Mills, Frank Arthur,	<i>Osborne.</i>
Payne, Charles Cornelius, D. O.,	<i>Eudora.</i>
Pearson, Walter J.,	<i>Kansas City.</i>
Phillips, Benjamin Lane,	<i>Wellsville.</i>
Regier, Henry Lewis,	<i>Newton.</i>
Sanders, Clarence Elmer,	<i>Merriam.</i>
Schaeffer, Frank, A. B.,	<i>Oskaloosa.</i>
Shy, David Emory,	<i>Knobnoster, Mo.</i>
Siever, Charles M., M. D.,	<i>Kansas City.</i>
Simpson, Lester I.,	<i>Weston, Mo.</i>
Smith, Arthur Ernest,	<i>Kansas City, Mo.</i>
Tolle, Cecil Elbert,	<i>Kansas City, Mo.</i>
Troje, Oscar R. F.,	<i>Kansas City, Mo.</i>

Fourth year, 29.

THIRD YEAR.

Dingus, John Orum,	Mound City.
English, Carlos C.,	Cimarron.
Erickson, Emil Thure,	Marquette.
Fortney, Alvin M.,	Fort Scott.
Greene, Anna Marie, A. M.,	Topeka.
Harrington, George Leonard,	<i>Independence, Mo.</i>
Harvey, Clarence C.,	Junction City.
Harvey, John K., A. B.,	Salina.
Haverkamp, Charles,	Lawrence.
Leonard, Homer O.,	<i>Kansas City, Mo.</i>
Riney, Fred H.,	Dodge City.
Swanson, John T.,	Independence.
Taylor, Fletcher Burr,	De Soto.
Thornton, Warren Thomas,	<i>Kansas City, Mo.</i>
Townsend, Benjamin I.,	Aurora.
Tuthill, Herbert,	Salina.
Woodin, John G., A. B.,	<i>Kansas City, Mo.</i>

Third year, 17.

SECOND YEAR.

Andrews, Laurin Lundy,	Solomon.
Bousfield, Midian Othello,	Kansas City.
Brawley, Mark Abernathy,	Frankfort.
Bull, Raymond Cooley,	<i>Cameron, Mo.</i>
Carter, John Basil,	Howard.
Chilcott, William L.,	Mankato.
Clark, Earl Finley,	Overbrook.
Davis, Brett,	Independence.
Everingham, J. Sumner,	Topeka.
Fisher, Wilhelm,	Lyons.
Hamill, Claude Emmett,	Lawrence.
Hollis, James Arthur,	Delphos.
Irland, Robert Douglass,	<i>Kansas City, Mo.</i>
Johnson, Clifford Park,	Coffeyville.
Larson, Joseph Emanuel,	Ottawa.
Palmer, William Robert,	Fall River.
Poutre, Fred Gerald,	Greenleaf.
Relihan, Harry,	Smith Center.
Rumsey, Fred Crosby,	Vinland.
Sellers, Claude Lucullus,	Osawatomie.
Siler, Charles A.,	Lawrence.
Trekell, Emery,	Wellington.
Van Atta, John Robert,	Beloit.

Second year, 23.

FIRST YEAR.

Barber, Marshall A.,	Lawrence.
Baumgartner, William Jacob,	Lawrence.
Beyer, Louie John,	Inman.
Boren, Arthur Justice,	Winfield.
Eastman, Oscar Frederick,	Bloomington.
Elias, Francis Leander,	Broughton.
Elting, Kate H.,	Ness City.
Finney, Royal Houghtelin,	<i>La Junta, Colo.</i>
Foote, Austin Alfred,	Clay Center.
Galloway, Milton B.,	Wa Keeney.
Ganoung, Edwin Grant,	Cawker City.
Guthrie, William G.,	Irving.
Heuser, Chester H.,	Fort Scott.
Hissem, Ralph Waldo,	Ellsworth.
Hudson, Henry Gosnold,	Atchison.
Hyndman, Henry Finlay,	Lawrence.
Jones, Elgie Joel,	McLouth.
Kaulbach, Charlotte,	Kansas City.
Lorimer, Wishard,	Olathe.
Matlock, Thomas,	Wichita.
Michener, William Ernest,	Beloit.
Morgan, Edwin C.,	Clay Center.
Mundell, Minnette Smith,	Lawrence.
Myers, Elmer Allen,	Clay Center.
Padfield, Earl George,	Hutchinson.
Petit, Julian Cæsar,	Walnut.
Petit, William D.,	Walnut.
Pierce, William Clarence,	<i>Lawson, Mo.</i>
Ransom, Jack Kennedy,	Otego.
Reed, Stanley Goodrich,	Topeka.
Reichard, Walter V.,	Paola.
Rogers, Fred,	Lawrence.
Scammon, Richard E.,	Lawrence.
Sloan, William Houser,	<i>Kansas City, Mo.</i>
Smith, Cecil,	Beloit.
Teall, Raymond Edwin,	Oberlin.
Townsend, Pinkney,	Edna.
Tretbar, Julius John,	Inman.
Ward, Carter William,	Osborne.
Whitfield, Earnest Robert,	Wabaunsee.
Wilson, Henry Isbell,	Emporia.

SPECIALS.

Bliss, Charles Jay,	Oskaloosa.
Brownlee, Howard Joseph,	Lawrence.
Hogg, Archibald,	Lawrence.
Kineey, Alma C.,	<i>Kansas City, Mo.</i>
Ockerblad, Nelse Frederick,	Lawrence.

Specials, 5.

THE SUMMER SESSION.

Adams, Samuel, <i>Chemistry</i> ,	Topeka.
Alford, Sylvia Daphne, <i>Piano</i> ,	Lawrence.
Allcutt, Adan, <i>Voice</i> ,	Lawrence.
Andrews, Katheryne, <i>Piano</i> ,	Lawrence.
Armstrong, Elsie Elizabeth, <i>Piano</i> , . .	Lawrence.
Bachmann, John Herbert, <i>Zoölogy, Education</i> ,	Moundridge.
Bailey, Reginald K., <i>Shop</i> ,	Lawrence.
Barber, Nettie Winona, <i>History, English, Latin</i> ,	Kirwin.
Barnes, Luther, <i>Chemistry</i> ,	Lawrence.
Barnett, Charles Arthur, <i>Economics, History</i> ,	Lawrence.
Bartlett, Ray Light, <i>German</i> ,	Kansas City.
Bartlett, Samuel Earl, <i>Law</i> ,	Wellington.
Battey, Lita Alleen, <i>English, History</i> , .	Kansas City.
Beach, Albert Isaac, <i>Law</i> ,	Olathe.
Bender, John Frederick, <i>French</i> , . . .	Holliday.
Benedict, Blanche, <i>Piano</i> ,	Lawrence.
Bigelow, Oliver Perry, <i>Chemistry</i> , . .	Lawrence.
Black, John Lee, <i>Chemistry</i> ,	Lawrence.
Blair, Grace, <i>Piano</i> ,	Lawrence.
Bohannon, Gaines Bailey, <i>History</i> , . .	Lawrence.
Bohn, Louis Joseph, <i>Chemistry</i> ,	Troy.
Bonar, Kathryn, <i>Piano</i> ,	Lawrence.
Bowden, Bessie, <i>Piano</i> ,	Lawrence.
Bowman, Mabel, <i>Piano</i> ,	Sibley.
Boyle, Grace Isabel, <i>History, Education</i> , .	Boyle.
Bramwell, Glenn H., <i>Chemistry</i> ,	Belleville.
Brannon, William Abbott, <i>Chemistry</i> , .	Lawrence.
Brewster, Frances, <i>Mathematics</i> , . . .	Thayer.
Broadie, Wilber Esting, <i>Law</i> ,	Winfield.
Brock, Frank Peterson, <i>Geology</i> , . . .	Lawrence.
Brown, John William, <i>Law</i> ,	Neodesha.
Brown, Mattie, <i>Piano</i> ,	Kansas City, Mo.
Brownlee, Howard Joseph, <i>Zoölogy</i> , . .	Lawrence.
Buchholz, William David, <i>Education, History</i> ,	Ottawa.

Bunz, Alice, <i>Mathematics, Chemistry,</i>	Kansas City, Mo.
Caldwell, Kate May, <i>Piano,</i>	Lawrence.
Cambern, Fred Jessup, <i>Geology,</i> . .	Erie.
Campbell, Mary Belle, <i>Chemistry,</i> . .	Severance.
Canty, Miles Emmett, <i>Law,</i>	Buffalo.
Cardwell, Della Dorothy, <i>English,</i> . .	St. John.
Carpenter, Mary, <i>Voice,</i>	Lawrence.
Cater, Ruth, <i>Piano,</i>	Lawrence.
Cauthorn, Ralph Martin, <i>English, Mathe-</i>	
<i>matics,</i>	Mankato.
Chalkley, Harold William, <i>Entomology,</i>	Lawrence.
Chapman, Inez Maud, <i>English,</i> . . .	Glasco.
Cheatham, Lutie, <i>History,</i>	Warrensburg, Mo.
Childress, John Martin, <i>Law,</i>	Lawrence.
Clevenger, Elda, <i>Piano,</i>	Lawrence.
Clifford, Sarah Maud, <i>German, English,</i>	Kansas City.
Clyde, Nathana Lore, <i>Physics, English,</i>	
<i>Psychology,</i>	Kansas City.
Cohron, Verla, <i>Latin, English,</i> . . .	St. Joseph, Mo.
Cole, Alma Blanche, <i>Piano,</i>	Lawrence.
Collins, Olive Lizzie, <i>Education, German,</i>	Lawrence.
Cone, Edna, <i>Piano,</i>	Lawrence.
Cone, Victor Mann, <i>Geology,</i>	Lawrence.
Cook, Julius Edgar, <i>Physics, Latin, Ger-</i>	
<i>man,</i>	Humboldt.
Cook, Ward Hance, <i>Entomology,</i> . . .	Kansas City, Mo.
Cooper, Melinda, <i>Piano,</i>	Sibley.
Copeland, Theodore, <i>Piano,</i>	Lawrence.
Corbin, Alberta, <i>Piano,</i>	Lawrence.
Coughlin, Robert Emmet, <i>Law,</i> . . .	Edgerton.
Cowles, Bertha, <i>Voice,</i>	Vinland.
Cowles, Maggie Ruth, <i>Latin,</i>	Harper.
Cross, Viah Mae, <i>Piano,</i>	Hutchinson.
Cruickshank, Ora Jane, <i>Botany,</i> . . .	Gem.
Cureton, Nellie King, <i>Latin,</i>	Lawrence.
Cureton, Thomas H., <i>Economics, History,</i>	
<i>Education,</i>	Lawrence.
Curl, Frankie Edith, <i>Physics,</i>	Long Island.
Dalton, Mrs. B. J., <i>Piano,</i>	Lawrence.
Davis, Charles Henry, <i>Law,</i>	Marysville.
Deere, Emil Olof, <i>Botany,</i>	Lindsborg.
Dews, Emma Frances, <i>German, Chemis-</i>	
<i>try,</i>	Lawrence.

Dingelstedt, Minnie Augusta, <i>Piano</i> , .	Lawrence.
Doolittle, Faith, <i>Piano</i> ,	Lawrence.
Drake, Frank, <i>Law</i> ,	Emporia.
Eberle, Mona, <i>Piano</i> ,	Lawrence.
Edgerton, Lyla Della, <i>Latin</i> ,	Randolph.
Edgerton, Oliver Paul, <i>Mathematics</i> , .	Randolph.
Edenburg, Frank, <i>Chemistry</i> ,	Lindsborg.
Edmonds, Letha, <i>Piano</i> ,	Lawrence.
Enns, Jacob H., <i>History, Physics, Phil-</i>	
<i>osophy</i> ,	Inman.
Epps, Walter Robert, <i>Chemistry</i> , . .	Pleasanton.
Eyerly, Tema L., <i>Geology</i> ,	Marysville.
Fitch, Louise, <i>Piano</i> ,	Lawrence.
Fleming, John Austin, <i>Law</i> ,	Buffalo.
Fones, Jennie Gar, <i>English</i> ,	Lyons.
Freeman, Eli Charles, <i>Mathematics</i> , .	Manhattan.
Frush, Isabel, <i>English</i> ,	Kansas City.
Galloway, Milton Blythe, <i>Embryology</i> ,	Wa Keeney.
Gashwiler, Marie, <i>Piano</i> ,	Colo. Springs, Colo.
Gaskill, Harry Andrew, <i>Law</i> ,	Ottawa.
Gentry, Ernest Robert, <i>Embryology</i> , .	Minneapolis.
Graham, Ralph Willis, <i>Law</i> ,	Hays.
Green, Bessie Burena, <i>Mathematics</i> , .	Peru.
Greene, Marie Anna, <i>Chemistry</i> , . .	Topeka.
Greene, Frank Cook, <i>Geology</i> ,	New Albany.
Greenlees, Agnes, <i>Piano</i> ,	Lawrence.
Griesa, Edna, <i>Piano</i> ,	Lawrence.
Guffler, Bertha, <i>Piano</i> ,	Lawrence.
Hall, Justus Otho, <i>Education</i> ,	Beloit.
Harris, John Percival, <i>History</i> ,	Ottawa.
Harshberger, Audrey, <i>Piano</i> ,	Lawrence.
Hart, Harry Ames, <i>Entomology</i> ,	Beloit.
Hartley, Oscar B., <i>Law</i> ,	Lyndon.
Hartman, Frank Alexander, <i>Entomol-</i>	
<i>ogy</i> ,	Kansas City.
Harvey, James Leslie, <i>Chemistry</i> , . .	Salina.
Hase, Clara Augusta, <i>Piano</i> ,	Lawrence.
Hayne, Mrs. Della, <i>Drawing</i> ,	Lawrence.
Hayward, Grace Althea, <i>German</i> , . . .	Lawrence.
Hazen, Isabelle, <i>Piano</i> ,	Lawrence.
Healey, Florence, <i>Piano</i> ,	Lawrence.
Henderson, Mrs. Fred, <i>Piano</i> ,	Kansas City, Mo.
Henry, Gladys, <i>Piano</i> ,	Lawrence.

Hepworth, Richard Granville, <i>Botany</i> ,	
<i>Chemistry</i> ,	Burlingame.
Herrington, Florence Elizabeth, <i>Draw-</i>	
<i>ing</i> ,	Lawrence.
Hubach, Mrs. C. Edward, <i>Piano</i> , . .	Lawrence.
Hill, Murray Gardner, <i>English</i> , . .	Ottawa.
Hogg, Archibald, <i>Embryology</i> , . . .	Lawrence.
Hooper, Thomas H., <i>Geology</i> ,	Smith Center.
Hoover, Roy William, <i>English</i> , . . .	Mahaska.
Hopkins, George Jay, <i>Chemistry</i> , . .	Garnett.
Houghton, Howard William, <i>Spanish</i> ,	Beloit.
Hudson, Edward Everett, <i>Geology</i> , . .	Lawrence.
Ise, Charles Daniel, <i>Geology</i> ,	Downs.
Jaedicke, Clare Lillian, <i>Piano</i> , . . .	Lawrence.
Jennings, James Thomas, <i>Law</i> ,	Nickerson.
Johnson, Flaude Edy, <i>Piano</i> ,	Lawrence.
Jones, Estella, <i>German</i> ,	Halstead.
Jones, Joseph Roy, <i>Shop</i> ,	Lawrence.
Keeney, Carl, <i>Voice</i> ,	Lawrence.
Keith, Mary Helen, <i>Piano</i> ,	Lawrence.
Kelley, Anna Armona, <i>English</i> ,	Topeka.
Kent, Robert Clark, <i>Chemistry</i> , . . .	Lawrence.
Kiefer, Norman Wellington, <i>English</i> , .	Lawrence.
Knott, Joseph Israel, <i>Mathematics</i> , . .	Yates Center.
Kuhne, Mrs. George W., <i>Piano</i> ,	Lawrence.
Laird, Paul Elmer, <i>Chemistry</i> ,	Argentine.
Landrum, Charles Hansford, <i>History</i> ,	Belle Plaine.
Landrum, Claude G., <i>Zoölogy</i> ,	Lawrence.
Lank, William John, <i>Chemistry</i> ,	La Crosse.
Lawson, Lorin Wendell, <i>History</i> , <i>Mathe-</i>	
<i>matics</i> ,	McPherson.
Lee, Floyd Brown, <i>History</i> ,	Louisburg.
Lee, Hugh, <i>German</i> ,	Louisburg.
Lee, Stephen Earl, <i>Law</i> ,	Topeka.
Lemmon, Lura Lee, <i>Botany</i> ,	Warrensburg, Mo.
Lenig, Ralph, <i>Piano</i> ,	Fort Wayne, Ind.
Lindsey, Lydia Almira, <i>German</i> ,	Cherryvale.
Lomax, Sullivan, <i>Law</i> ,	Independence.
Loomis, Maud, <i>Zoölogy</i> ,	Emporia.
Lund, Sara, <i>English</i> ,	Marquette.
Maher, Marie, <i>Piano</i> ,	Kansas City, Mo.
Mann, Elbert Alexander, <i>Law</i> ,	Lawrence.
Martin, Charles Irving, <i>Law</i> ,	Fort Scott.

Martin, Mrs. Ida, <i>Law</i> ,	Fort Scott.
Miller, Mattie, <i>Piano</i> ,	Kansas City.
Milton, Sidney M., <i>Chemistry</i> ,	Lawrence.
Mitchell, Hannah, <i>Piano</i> ,	Lawrence.
Monley, Teresa Irene, <i>Zoölogy</i> ,	Wellington.
Moon, Virgil Holland, <i>Mathematics</i> ,	Marquette.
Moore, Oreta Elizabeth, <i>Piano</i> ,	Lawrence.
Morgan, Ivy Beatrice, <i>History</i> ,	Sylvan Grove.
Morrow, Clay Mahurin, <i>English, Chemistry</i> ,	Topeka.
Moyes, Fay, <i>Piano</i> ,	Lawrence.
Muckle, Grace Bailey, <i>History</i> ,	Topeka.
Myers, Martha F., <i>Piano</i> ,	Lawrence.
McCanles, Wendell Windom, <i>English, History</i> ,	Lincoln.
McDaniel, Eugenia Inez, <i>Entomology</i> ,	La Crosse.
McKenzie, Viva Hazelton, <i>History, Psychology</i> ,	Lawrence.
McKoin, Mabel, <i>Piano</i> ,	Olathe.
Nash, Clarence Adelbert, <i>Physics</i> ,	Sterling.
Nixon, Henry L., <i>German</i> ,	Kansas City, Mo.
Noyes, Edward Newton, <i>Chemistry</i> ,	Lawrence.
Nugent, Goldwin Inch, <i>Embryology</i> ,	Briggs Corners, Can.
Nungesser, Ella, <i>Piano</i> ,	Lawrence.
Nye, Kate Lucile, <i>Piano</i> ,	Vinland.
Palmer, Mary, <i>Piano</i> ,	Lawrence.
Passon, Rebecca, <i>Piano</i> ,	Lawrence.
Peairs, Lawrence Reece, <i>Piano</i> ,	Lawrence.
Pendleton, Laura, <i>Piano</i> ,	Lawrence.
Pettingill, Anne Louise, <i>Piano</i> ,	Linwood.
Pilcher, Edith Blanche, <i>English</i> ,	Lawrence.
Potts, Nellie Brander, <i>History, Education</i> ,	Paola.
Pryor, Erla, <i>Piano</i> ,	Lawrence.
Radell, Clara Teresa, <i>Chemistry</i> ,	Pittsburg.
Rankin, Juanita Gertrude, <i>Piano</i> ,	Albuquerque, N. M.
Rankin, Madonna Alice, <i>Piano</i> ,	Albuquerque, N. M.
Raymond, Bessie, <i>Piano</i> ,	Lawrence.
Renn, Eliza Luella, <i>Drawing</i> ,	Lawrence.
Reno, Edward Newton, <i>Botany</i> ,	Lawrence.
Rhodes, Harry Herbert, <i>Entomology</i> ,	Wellington.
Richards, Aute, <i>Education, Botany</i> ,	Lawrence.
Riggs, Henry Clay, <i>Physics</i> ,	Lawrence.

Riling, Margaret, <i>Piano</i> ,	Lawrence.
Robb, William Selden, <i>History</i> ,	Larned.
Roberts, Roy Allison, <i>Economics, History</i> ,	Lawrence.
Roberts, Vivian Clare, <i>History, English</i> ,	Lawrence.
Robinson, Harriet, <i>Piano</i> ,	Lawrence.
Robinson, Jennie, <i>Piano</i> ,	Lawrence.
Roller, Harry F., <i>Law</i> ,	Lawrence.
Russell, Claude, <i>Spanish</i> ,	Lawrence.
Russell, Mary Ruth, <i>Piano</i> ,	Lawrence.
Sawtell, James Herbert, <i>History</i> , . . .	Oklahoma, Okla.
Schleifer, Zana May, <i>Piano</i> ,	Lawrence.
Schwinley, Audrey Effie, <i>Piano</i> , . . .	Lawrence.
Shafer, Annie Neil, <i>Latin, History</i> , . .	Olathe.
Sheedy, Dennis Joseph, <i>Law</i> ,	Fredonia.
Sheldon, Miriam, <i>Chemistry</i> ,	Topeka.
Shepherd, William Mentry, <i>Physics, Latin</i> ,	Tonganoxie.
Shinn, Clay Bride, <i>German</i> ,	Ottawa.
Sinclair, Benjamin Franklin, <i>German</i> , .	Hooser.
Smith, Charles Watson, <i>Law</i> ,	Lincoln.
Smith, Etta Augusta, <i>Piano</i> ,	Lawrence.
Smith, Helen B., <i>Public Speaking</i> , . .	Nickerson.
Spray, Lester, <i>Piano</i> ,	Lawrence.
Spray, Ruth, <i>Piano</i> ,	Lawrence.
Stanton, Fred Hadley, <i>History, Public Speaking</i> ,	Lawrence.
Stelter, Grace, <i>Piano</i> ,	Lawrence.
Sterling, Mrs. Harriett, <i>Voice</i> ,	Lawrence.
Stone, Rosalia Rachel, <i>Botany</i> ,	Walton.
Stone, Sadie Melinda, <i>English, History</i> , .	Lawrence.
Strode, Helena May, <i>Piano</i> ,	Lawrence.
Stryker, Jacob Lowe, <i>Law</i> ,	Fredonia.
Stuart, Elizabeth Geraldine, <i>History, Education</i> ,	Lawrence.
Stuart, Stella Kilbourne, <i>History</i> , . .	Lawrence.
Sweeney, Anna, <i>Piano</i> ,	Lawrence.
Templin, Alice, <i>Piano</i> ,	Lawrence.
Thestrup, Grace Elizabeth, <i>History, English</i> ,	Williamsburg.
Thompson, Earl L., <i>Mathematics</i> , . . .	Colony.
Tredick, George Chester, <i>Chemistry</i> , .	Kingman.

Trekell, Emery, <i>Chemistry</i> ,	Wellington.
Tripp, Lena Alice, <i>Piano</i> ,	Lawrence.
Tudhope, Pearl, <i>Piano</i> ,	Linwood.
Uhrlaub, Agnes, <i>Piano</i> ,	Lawrence.
Unthanks, Georgia, <i>Piano</i> ,	Lawrence.
Van Arsdale, Jonathan, <i>German, Mathematics</i> ,	Lawrence.
Vandling, Vinnie, <i>French</i> ,	Larned.
Van Tuyl, Nellie Jane, <i>English, Botany</i> ,	Leavenworth.
Veatch, Nathan Thomas, <i>Mathematics</i> ,	Atchison.
Walker, Charles Neville, <i>English, Economics</i> ,	Kansas City.
Wangerien, Stella Sophia, <i>History, Education</i> ,	Vining.
Warren, Guy, <i>English, Economics</i> ,	Salina.
Warren, Luella, <i>Mathematics</i> ,	Hutchinson.
Watson, Rachel H., <i>Piano</i> ,	Lawrence.
Weatherby, Leroy S., <i>Chemistry</i> ,	Lawrence.
Weaver, Amorette, <i>Piano</i> ,	Lawrence.
Weitzenkorn, Dora, <i>Piano</i> ,	Lawrence.
Wenrich, Frances Christina, <i>Piano</i> ,	Lawrence.
Wherry, Lindley Phorlando, <i>French, Shop</i> ,	Lawrence.
Whitla, Mrs. Clara, <i>Drawing</i> ,	Lyons.
Whitney, Martha Steele, <i>German</i> ,	Olathe.
Wiedemann, Paul Anthony, <i>Chemistry</i> ,	Alma.
Wilder, William Jonas, <i>Chemistry, Shop</i> ,	Salina.
Wilson, Christmas, <i>Latin</i> ,	Iola.
Winnagle, Roscoe, <i>Law</i> ,	Hiram, Ohio.
Wise, Charlotte Antinetta, <i>Piano</i> ,	Lawrence.
Withington, Charles Hall, <i>Entomology</i> ,	Manhattan.
Wolcott, Grace, <i>Zoölogy</i> ,	Lawrence.
Wood, Bessie Marian, <i>German</i> ,	Strong City.
Woodhead, Georgia Madge, <i>Latin</i> ,	Lawrence.
Wright, Clinton, <i>Botany</i> ,	Baxter Springs.
Yates, James Anderson, <i>Geology</i> ,	Ottawa.
Zebb, Linda, <i>Piano</i> ,	Lawrence.

SUMMARY OF ENROLMENT.

1906-'07.

DEPARTMENTS.	Men.	Women.	Total.
The Graduate School	51	38	89
The College of Liberal Arts and Sciences	382	395	777
Senior Class.....	53	61	114
Junior Class.....	54	53	107
Sophomore Class.....	58	75	133
Freshman Class.....	148	146	294
Special Students.....	69	60	129
The School of Engineering	415	1	416
Senior Class.....	38	.....	38
Junior Class.....	48	.....	48
Sophomore Class.....	96	.....	96
Freshman Class.....	217	.....	217
Special Students.....	11	1	12
Unclassified.....	5	.....	5
The School of Fine Arts	25	148	173
Graduate Students .....	.....	4	4
Senior Class.....	.....	7	7
Junior Class.....	1	11	12
Sophomore Class.....	1	11	12
Freshman Class.....	2	49	51
Special Students.....	21	66	87
The School of Law	164	2	166
Senior Class.....	35	1	36
Middle Class.....	32	1	33
Junior Class.....	84	.....	84
Special Students.....	13	.....	13
The School of Pharmacy	71	3	74
Senior Class.....	17	1	18
Junior Class.....	51	2	53
Special Students.....	3	.....	3
The School of Medicine	111	6	117
Graduate Students	1	1	2
Fourth-year Class.....	29	.....	29
Third-year Class.....	16	1	17
Second-year Class.....	23	.....	23
First-year Class.....	38	3	41
Special Students.....	4	1	5
The Summer Session	126	138	264
Graduate Students	13	15	28
Undergraduate Students	113	123	236
Total enrolment in all the schools	1,344	731	2,071
Names counted twice	168	121	289
Total registration, 1906-'07	1,176	610	1,786

CLASSIFICATION OF STUDENTS.

BY KANSAS COUNTIES.

Allen	27	Graham	1	Osage	29
Anderson	8	Gray	1	Osborne	8
Atchison	18	Greenwood	9	Ottawa	18
Barber	1	Harper	13	Pawnee	4
Barton	14	Harvey	23	Phillips	7
Bourbon	25	Haskell	1	Pottawatomie ..	10
Brown	25	Hodgeman	1	Pratt	5
Butler	17	Jackson	11	Reno	25
Chase	4	Jefferson	14	Republic	12
Chautauqua	10	Jewell	8	Rice	22
Clay	20	Johnson	22	Riley	7
Cloud	10	Kingman	7	Rooks	5
Crawford	23	Kiowa	2	Rush	5
Cherokee	18	Labette	18	Russell	4
Coffey	8	Leavenworth ...	27	Saline	19
Comanche	1	Lincoln	11	Scott	1
Cowley	18	Linn	9	Sedgwick	29
Decatur	5	Logan	2	Shawnee	50
Dickinson	30	Lyon	16	Sheridan	4
Doniphan	14	Marion	8	Smith	9
Douglas*	473	Marshall	22	Stafford	2
Edwards	2	McPherson	24	Sumner	20
Elk	9	Miami	23	Thomas	5
Ellis	11	Mitchell	13	Trego	3
Ellsworth	11	Montgomery ...	41	Wabaunsee	3
Finney	9	Morris	7	Washington	14
Ford	6	Neosho	18	Wilson	20
Franklin	18	Nemaha	20	Woodson	5
Geary	10	Ness	4	Wyandotte	81
Gove	2	Norton	4		

*A large number of students whose names appear in this catalogue as residents of Douglas county are so catalogued because they temporarily reside in Lawrence for the purpose of attending the University.

BY STATES.

Arkansas	1	Nebraska	1
Colorado	8	New Mexico	3
Cuba	1	New York	2
Illinois	1	Ohio	1
Indian Territory	1	Oklahoma	11
Indiana	2	South Dakota	1
Iowa	3	Texas	1
Kansas	1,665	Wyoming	1
Massachusetts	1		
Missouri	82	Total	1,786

ACKNOWLEDGMENTS.

Gifts to the library, March, 1906, to March, 1907.

Vols.

American Bar Association.....	1
Blackmar, Prof. F. W., Lawrence.....	3
Boodin, Prof. J. E., Lawrence.....	1
Case, Judge Nelson, Oswego.....	1
Clark, Dr. Arthur W., Lawrence.....	5
Crissman, G. R., Salina.....	1
Doughty, Hon. A. G., Ottawa, Canada.....	1
Gray, Prof. C. H., Lawrence.....	1
Howland, Mrs. M. G., Lawrence.....	2
Illinois state historical library, Springfield, Ill.....	1
Kansas Board of Control, Topeka.....	2
Kansas secretary of state, Topeka.....	2
Kay, Prof. G. F., Lawrence.....	1
Lels, Mrs. George, Lawrence.....	1
New York state historian, Albany, N. Y.....	2
Ohio Bureau of Labor, Columbus, Ohio.....	1
Parke, Davis & Co., Kansas City, Mo.....	1000
Plumb, Mrs. P. B., Emporia.....	118
Rhode Island Bureau of Industrial Statistics.....	1
Royal Society of Canada, Ottawa, Canada.....	1
University of Chicago, Chicago, Ill.....	50
University of Michigan library, Ann Arbor, Mich.....	7
Wisconsin railroad commissioners, Madison, Wis.....	1

NEWSPAPERS AND PERIODICALS.

Given by publishers, unless otherwise indicated.

DAILIES.

Ablene Daily Reflector.....	Ablene.
Daily Republican	Clay Center.
Emporia Gazette	Emporia.
Evening Star	Independence.
Evening Kansas Republican.....	Newton.
Fort Scott Daily Republican.....	Fort Scott.
Fort Scott Daily Tribune and Monitor.....	Fort Scott.
Hutchinson Daily News.....	Hutchinson.
Independence Daily Reporter.....	Independence.
Iola Daily Record.....	Iola.
Iola Daily Register.....	Iola.
Kansas City, Kansas, Globe.....	Kansas City, Kan.
Kansas City Journal.....	Kansas City, Mo.
Lawrence Daily Gazette.....	Lawrence.
Lawrence Daily Journal.....	Lawrence.
Lawrence Daily World.....	Lawrence.
McPherson Daily Republican.....	McPherson.

Parsons Daily Sun.....	Parsons.
Salina Evening Journal.....	Salina.
Topeka Capital	Topeka.
Topeka Daily Herald.....	Topeka.
Topeka State Journal.....	Topeka.

WEEKLIES.

Abilene Democrat	Abilene.
(Abilene) Dickinson County News.....	Abilene.
Abilene Weekly Chronicle.....	Abilene.
Alma Enterprise	Alma.
Altamont Journal	Altamont.
Anthony Republican	Anthony.
Ashland Clipper	Ashland.
Atchison Weekly Globe.....	Atchison.
Barber County Democrat.....	Great Bend.
Barber County Index.....	Medicine Lodge.
Baxter Springs News.....	Baxter Springs.
Belle Plaine News.....	Belle Plaine.
Belleville Freeman	Belleville.
Belleville Telescope	Belleville.
Beloit Gazette	Beloit.
Beloit Times	Beloit.
Better Way	Minneapolis.
Bison Bee	Bison.
Blue Mound Sun.....	Blue Mound.
Blue Rapids Times.....	Blue Rapids.
Breeder's Gazette	Chicago, Ill.
Brown County World.....	Hiawatha.
Burlington Independent	Burlington.
Burlington Republican	Burlington.
Caney Chronicle	Caney.
Canton Pilot	Canton.
Cawker City Ledger	Cawker City.
Central Kansas Democrat.....	Lyons.
Centerville Courier	Centerville.
Chapman Advertiser	Chapman.
Chase Register	Chase.
Chase County Leader.....	Cottonwood Falls.
Christian Register	Boston, Mass.
Clark County Clipper.....	Ashland.
Clay Center Dispatch.....	Clay Center.
Clay Center Times.....	Clay Center.
Coffeyville Record	Coffeyville.
Columbus Advocate	Columbus.
Commoner	Lincoln, Neb.
Conway Springs Star.....	Conway Springs.
Council Grove Republican.....	Council Grove.
Cornet	Courtland.
Courier-Democrat	Seneca.
Democrat	McPherson.
De Soto Eagle Eye.....	De Soto.
El Dorado Republican	El Dorado.
Elk County Citizen.....	Howard.

Elk Falls Journal.....	Elk Falls.
Ellsworth Messenger	Ellsworth.
Emporia Republican	Emporia.
Erie Record	Erie.
Eudora News	Eudora.
Eureka Herald	Eureka.
Fairview Enterprise	Fairview.
Farmer and Stockman.....	Kansas City, Mo.
Fredonia Herald	Fredonia.
Fort Leavenworth Herald.....	Fort Leavenworth.
Galena Republican	Galena.
Garnett Journal	Garnett.
Glasco Sun	Glasco.
Globe	Meade.
Grant County Republican.....	Ulysses.
Grand Rapids Times.....	Grand Rapids, Mch.
Great Bend Register.....	Great Bend.
Haddam City Clipper.....	Haddam.
Herald of Gospel Liberty.....	Dayton, Ohio.
Herington Times	Herington.
Holton Recorder	Holton.
Holton Signal	Holton.
Howard Courant	Howard.
Humboldt Herald (semiweekly).....	Humboldt.
Illustrated London News (Mrs. T. H. Chalkley, Lawrence)	London, England.
Independent	Wa Keeney.
Independent News	Girard.
Irving Leader	Irving.
Jetmore Republican	Jetmore.
Jewell County Advertiser.....	Mankato.
Junction City Union.....	Junction City.
Kansas Agitator	Garnett.
Kansas American	McPherson.
Kansas Democrat	Hiawatha.
Kansas Farmer	Topeka.
Kansas Standard	La Cygne.
Kansas Star	Olathe.
Kingman Journal	Kingman.
Kiowa County Signal.....	Greensburg.
Kiowa News Review.....	Kiowa.
La Cygne Weekly Journal.....	La Cygne.
Larned Weekly Chronoscope.....	Larned.
Lawrence Germania	Lawrence.
Lindsborg News	Lindsborg.
Linn County Republic.....	Mound City.
Live Stock Farmer.....	Dodge City.
Logan Republican	Logan.
Long Island New Leaf.....	Long Island.
Longton Gleaner	Longton.
Louisville Lyre	Louisville.
Lyons Republican	Lyons.
Lyndon Record	Lyndon.
Mall and Breeze.....	Topeka.

Manhattan Mercury	Manhattan.
Manhattan Nationalist	Manhattan.
Marion Record	Marion.
Marshall County News	Marysville.
Messenger	Smith Center.
Miami Republican	Paola.
Minneapolis Messenger	Minneapolis.
Mound Valley Herald	Mound Valley.
Neodesha Register	Neodesha.
Ness County News	Ness City.
New Era	Formoso.
New Voice	Chicago, Ill.
Nickerson Argosy	Nickerson.
Norton Courier	Norton.
Oakley Graphic	Oakley.
Olathe Mirror	Olathe.
Olathe Republican Tribune	Olathe.
Osage City Free Press	Osage City.
Osawatomie Graphic	Osawatomie.
Osborne County Farmer	Osborne.
Oswego Democrat	Oswego.
Oswego Independent	Oswego.
Ottawa Independent	Ottawa.
Ottawa Weekly Herald	Ottawa.
Paola Times	Paola.
People's Voice	Wellington.
Phillipsburg Herald	Phillipsburg.
Plainville Times	Plainville.
Pleasanton Observer	Pleasanton.
Pratt Union	Pratt.
Press	Kansas City, Kan.
Progress	Minneapolis.
Public (E. E. Soderstrom, Emporia)	Chicago, Ill.
Public Opinion	Osage City.
Randolph Enterprise	Randolph.
Record	Russell.
Republic City News	Republic City.
Republican Record	Hays City.
Rice County Eagle	Lyons.
Robinson Index	Robinson.
Rooks County Republican	Stockton.
Rush City Breeze	Rush City.
Sabetha Herald	Sabetha.
Sabetha Star	Sabetha.
Salina Union	Salina.
Salina Weekly Journal	Salina.
Smith County Pioneer	Smith Center.
Stafford Courier	Stafford.
Sterling Kansas Bulletin	Sterling.
St. Marys Journal	St. Marys.
St. Paul Journal	St. Paul.
Seneca Courier-Democrat	Seneca.
Seneca Tribune	Seneca.
South Kansas Tribune	Independence.

Star and Kansan.....	Independence.
Torch of Liberty.....	Mound City.
United Presbyterian	Pittsburg, Pa.
Uniontown News.....	Uniontown.
Valley Center Index.....	Valley Center.
Wamego Times	Wamego.
Washington Register	Washington.
Washington Republican	Washington.
Waterville Telegraph	Waterville.
Wathena Times	Wathena.
Wathena Weekly Republican.....	Wathena.
Weekly Kansas Chief.....	Troy.
Weekly News	Kansas City, Kan.
Weekly Review	Frankfort.
Weekly Sentinel	Tonganoxie.
Western Call	Beloit.
Western Call	Leavenworth.
Western Times	Shannon.
Westmoreland Record	Westmoreland.
Westmoreland Signal	Westmoreland.
Wichita Eagle	Wichita.
Wilson Echo	Willson.
Williamsburg Star	Williamsburg.
Winfield Courier	Winfield.
Wyandotte Herald	Kansas City, Kan.
Valley Falls New Era.....	Valley Falls.

SEMI-MONTHLIES.

American Druggist and Pharmaceutical Record.....	New York.
Clay Record	Chicago, Ill.
Mines and Minerals.....	Scranton, Pa.
Virginia Medical Semimonthly.....	Richmond, Va.
Western Odd Fellow.....	Topeka.

MONTHLIES.

Advocate of Peace.....	Boston, Mass.
Architect Builder	Kansas City, Mo.
Christian Educator	Great Bend.
Electrical Trade	Chicago, Ill.
Good Roads Magazine.....	New York.
Hammer and Pen.....	New York.
Insurance Magazine	Kansas City, Mo.
Irrigation Age	Chicago, Ill.
Kansas City Medical Record.....	Kansas City, Mo.
Live Wire	St. Louis.
Meyer Bros.' Druggist.....	St. Louis.
Our Dumb Animals.....	Boston, Mass.
Search Light	New York.
School and Fireside.....	Hutchinson.
Technical World	Chicago, Ill.
Valve World	Chicago, Ill.
Western Drug Record.....	Kansas City, Mo.
Western School Journal.....	Topeka.

QUARTERLIES.

Bulletin of the Wool Manufacturers.....	Boston, Mass.
Hartford Seminary Record.....	Hartford, Conn.
Single-tax Review (E. E. Soderstrom, Emporia).....	Chicago, Ill.
Transactions of American Mathematical Society (Mrs. H. B. Newson, Lawrence).....	New York.

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JOHN C. ...
LIBRARY

Vol. IX.

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No. 1. 2671

BULLETIN OF THE
UNIVERSITY OF KANSAS.

GENERAL
CATALOGUE
1907-'08.



LAWRENCE, KANSAS.

Forty-second Annual Catalogue

OF THE

UNIVERSITY OF KANSAS

For the Year 1907-'08,

AND

Announcements for the Year 1908-'09.



LAWRENCE, KANSAS,
APRIL, 1908.

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CHRONOLOGICAL TABLE.

- 1855.—(December.) A university provided for in the first constitution of Kansas territory, at Topeka.
- 1857.—(June.) State University at Lawrence provided for by free-state legislature, Topeka.
- 1857.—(September.) Seminary of learning provided for in Lecompton constitution.
- 1858.—(April). Systems of public instruction, including a university department, provided for in Leavenworth constitution.
- 1859.—(July.) State University provided for as at present, in Wyandotte constitution, now the constitution of the state of Kansas.
- 1861.—Congress set apart and reserved for the use and support of a State University seventy-two sections of land.
- 1863.—Lawrence selected as location for the University of Kansas.
- 1864.—The University organized by the legislature.
- 1865.—March 21, first meeting of the Board of Regents.
- 1866.—July 19, Regents elected the first Faculty of the University, consisting of Elial Jay Rice, A. M., David Hamilton Robinson, A. M., and Francis Huntington Snow, A. M.
- 1866.—North College erected.
- 1866.—September 12, first session of the University opened at North College.
- 1870.—Department of Engineering organized.
- 1872.—Fraser Hall erected and occupied.
- 1876.—Normal Department established.
- 1877.—Department of Music organized.
- 1878.—Department of Law organized.
- 1883.—Medical Hall (old Chemistry Building) erected.
- 1885.—Department of Pharmacy established.
- 1885.—Normal Department discontinued.
- 1886.—Snow Hall erected.
- 1891.—The Preparatory Department discontinued, the work being left to the high schools of the state.
- 1891.—The University reorganized and Schools of Arts, Engineering, Law, Fine Arts and Pharmacy established.
- 1894.—Spooner Library erected.
- 1894.—Chancellor's residence erected.
- 1895.—Blake Hall erected.
- 1896.—The Graduate School established.
- 1899.—The Fowler Shops erected.
- 1899.—The School of Medicine established.
- 1900.—Chemistry and Pharmacy Building erected.
- 1902.—Natural History Museum Building erected.
- 1904.—The name of the School of Arts changed to the College of Liberal Arts and Sciences.
- 1904.—Green Hall erected.
- 1905.—Full four-year course in medicine established.
- 1905.—Eleanor Taylor Bell Memorial Hospital erected.
- 1906.—Robinson Auditorium-Gymnasium erected.
- 1906.—Clinical Laboratory erected.
- 1907.—Civil and Mechanical Engineering Building erected.

OFFICE HOURS.

THE CHANCELLOR OF THE UNIVERSITY,

Room 4, Fraser Hall,
10 A. M. to 12 M. and 2 to 4 P. M.

THE SECRETARY OF THE UNIVERSITY,

Room 9, Fraser Hall,
8:30 A. M. to 12:30 P. M. and 2 to 5 P. M.

THE REGISTRAR OF THE UNIVERSITY,

Room 9, Fraser Hall,
8 A. M. to 12 M. and 2 to 5 P. M.

THE DIRECTOR OF THE SUMMER SESSION,

Room 17, Fraser Hall,
Tuesdays and Thursdays, 9 to 10 A. M., first term.
Mondays, Wednesday, and Fridays, 9 to 10 A. M., second term.

THE DEAN OF THE GRADUATE SCHOOL,

Room 13, Fraser Hall,
9 to 10 A. M.

THE DEAN OF THE COLLEGE OF LIBERAL ARTS AND SCIENCES,

Room 1, Fraser Hall,
10:15 A. M. to 12:15 P. M.

THE DEAN OF THE SCHOOL OF ENGINEERING,

Blake Hall, first floor,
9 A. M. to 12 M.

THE DEAN OF THE SCHOOL OF LAW,

Green Hall,
9 to 10 A. M.

THE DEAN OF THE SCHOOL OF FINE ARTS,

North College,
11 A. M. to 12 M. and 2:30 to 5 P. M.

THE DEAN OF THE SCHOOL OF PHARMACY,

2d floor, Chemistry and Pharmacy Building.
10 to 11 A. M.

THE DEAN OF THE SCIENTIFIC DEPARTMENT, SCHOOL
OF MEDICINE,

Basement, Medical Hall,
10:15 A. M. to 12:15 P. M.

THE DEAN OF THE CLINICAL DEPARTMENT, SCHOOL OF
MEDICINE,

Eleanor Taylor Bell Memorial Hospital, Rosedale, Kan.,
9 A. M. to 12 M. and 1 P. M. to 5 P. M.

THE HIGH-SCHOOL VISITOR,

Room 10b, Fraser Hall,
Mondays and Saturdays, 9 A. M. to 12 M. and 2 to 4 P. M.

UNIVERSITY CALENDAR.

ACADEMIC YEAR 1907-'08.

- Jan. 3, Friday—Christmas recess ends.
 Feb. 3 to 7, Monday to Friday, inclusive—Semiannual examinations.
 Feb. 10, Monday—Second term begins.
 April 3, Friday—First half-term ends.
 April 6, Monday—Second half-term begins.
 May 7, Thursday—Spring concert by University Mandolin Club.
 May 8 and 9, Friday and Saturday—Spring Music Festival.
 May 12, Tuesday—Spring concert by University Orchestra.
 June 1 to 5, Monday to Friday, inclusive—Annual examinations.
 June 5, Friday—Commencement concert by Music department, School of Fine Arts.
 June 7, Sunday, 8 P. M.—Baccalaureate sermon.
 June 8, Monday, 8 P. M.—Sigma Xi address.
 June 9, Tuesday, 10:30 A. M.—Annual Alumni address.
 June 9, Tuesday, 8 P. M.—Chancellor's reception.
 June 10, Wednesday, 10 A. M.—Commencement exercises.
 June 11, Thursday—Opening of Summer Session.

ACADEMIC YEAR 1908-'09.

- Sept. 16, Wednesday—First term begins.
 Sept. 16, 17, 18, and 19, Wednesday, Thursday, Friday, and Saturday—Examination of candidates for admission, and presentation of certificates from high schools, academies, and other institutions.
 Sept. 18, Friday—General assembly of students and annual address, in University Hall, at 10 A. M.
 Nov. 16, Monday—Second half-term begins.
 Nov. 17, Tuesday—Winter concert by University Orchestra.
 Nov. 26 and 27, Thursday and Friday—Thanksgiving recess.
 Dec. 8, Tuesday, 8 P. M.—Christmas concert by Music department, School of Fine Arts.
 Dec. 10, Thursday—Winter concert by University Glee and Mandolin Clubs.

CHRISTMAS RECESS—Saturday, Dec. 19, to Friday, Jan. 1, inclusive.

- Jan. 1, Friday—Christmas recess ends.
 Feb. 1 to 5, Monday to Friday, inclusive—Semiannual examinations.
 Feb. 8, Monday—Second term begins.
 April 2, Friday—First half-term ends.
 April 5, Monday—Second half-term begins.
 May 7 and 8—Spring Music Festival.
 May 11, Tuesday—Spring concert by University Orchestra.
 May 31 to June 4, Monday to Friday, inclusive—Annual examinations.
 June 4, Friday—Commencement concert by Music department, School of Fine Arts.
 June 6, Sunday, 8 P. M.—Baccalaureate sermon.
 June 7, Monday, 8 P. M.—Phi Beta Kappa address.
 June 8, Tuesday, 10:30 A. M.—Annual Alumni address.
 June 8, Tuesday, 8 P. M.—Chancellor's reception.
 June 9, Wednesday, 10 A. M.—Commencement exercises.
 June 10, Thursday—Opening of Summer Session

1907.							1908.							1909.													
JULY.							JANUARY.							JULY.							JANUARY.						
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DECEMBER.							JUNE.							DECEMBER.							JUNE.						
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29	30	31	28	29	30	27	28	29	30	31	27	28	29	30
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GENERAL INFORMATION.

THE GENERAL CATALOGUE of the University of Kansas is issued in the spring of each year. A copy will be sent free to any one desiring it.

SEPARATE CATALOGUES of the schools of the University are issued at the same time with the General Catalogue of the University. Separate catalogues will give complete information as to each school or department of the University. Prospective students of the School of Engineering, the School of Law, the School of Pharmacy, the School of Fine Arts, the School of Medicine or the Summer Session will ask for the separate catalogue of the desired school. They are issued free of cost.

THE ALUMNI CATALOGUE of the University is issued at intervals, giving a list of the graduates of the University. Copies are sent free to graduates and former students of the University.

THE UNIVERSITY NEWS BULLETIN is issued weekly from the Registrar's office, for the purpose of furnishing the newspapers, high-school students and others of the state items of interest regarding University affairs. It will be sent regularly, without charge, to any one who may express a desire to receive it.

A HIGH-SCHOOL MANUAL is issued every two years, giving in detail the requirements for entrance to the different schools of the University, together with suggestions as to methods, courses of study, laboratory equipment, and a list of accredited high schools.

SPECIAL BULLETINS are issued during the University year covering topics of importance to the University and the schools and colleges of the state.

THE UNIVERSITY CALENDAR is posted weekly upon the local bulletin-board, announcing lectures, concerts, prizes, and other matters of public interest under the auspices of the University, and as soon as possible will be printed in sufficient numbers for distribution, on request, to high schools of the state and to graduates and former students.

For catalogues and other information, address

THE REGISTRAR,

UNIVERSITY OF KANSAS,

Lawrence, Kan.

PART I.

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HON. THOMAS M. POTTER, Peabody.....	Term exp. 1909
HON. ALEXANDER C. MITCHELL, Lawrence, “ “	1909
HON. WILLIAM A. WHITE, Emporia..... “ “	1909
HON. SCOTT HOPKINS, Horton..... “ “	1911
HON. J. WILLIS GLEED, Topeka..... “ “	1911
HON. WILLIAM Y. MORGAN, Hutchinson..... “ “	1911

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Grounds:

Messrs. POTTER, WHITE, and MORGAN.

Auditing:

Messrs. MORGAN, GLEED, and MITCHELL.

Clinical Department:

Messrs. MITCHELL, WHITE, and HOPKINS.

Finance:

Messrs. GLEED, MORGAN, and POTTER.

Organization and Policy:

Messrs. HOPKINS, MITCHELL, and GLEED.

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WILLIAM H. CARRUTH, PH. D., Vice-president of the Faculties.

EDWARD E. BROWN, Secretary and Purchasing Agent.

GEORGE O. FOSTER, A. B., Registrar.

WILLIAM H. JOHNSON, A. M., High-school Visitor.

EBEN F. CROCKER, Superintendent of Buildings and Grounds.

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OLIN TEMPLIN, A. M., Dean of the College of Liberal Arts and Sciences.

FRANK O. MARVIN, A. M., Dean of the School of Engineering.

JAMES W. GREEN, A. M., Dean of the School of Law.

CHARLES S. SKILTON, A. B., Dean of the School of Fine Arts.

LUCIUS E. SAYRE, B. S., PH. M., Dean of the School of Pharmacy.

MERVIN T. SUDLER, PH. D., Dean of Scientific Department, School of Medicine.

GEORGE H. HOXIE, M. D., Dean of Clinical Department, School of Medicine.

ARTHUR T. WALKER, PH. D., Director of the Summer Session.

LIBRARY AND GYMNASIUM.

CARRIE M. WATSON, A. B., Librarian.

JAMES NAISMITH, A. B., M. D., Director of Gymnasium.

THE MUSEUMS.

FRANK STRONG, PH. D., *ex officio* Director of the Museums.

FRANCIS H. SNOW, PH. D., LL. D., Curator of the Entomological Collections.

LEWIS L. DYCHE, A. M., M. S., Curator of the Mammals, Birds, and Fishes.

CLARENCE E. McCLUNG, PH. D., Curator of the Vertebrate Paleontological Collections.

ERASMUS HAWORTH, PH. D., Curator of the Geological and Mineralogical Collections.

WILLIAM C. STEVENS, M. S., Curator of the Herbarium.

ALEXANDER M. WILCOX, PH. D., Curator of the Classical Museum.

UNIVERSITY GEOLOGICAL SURVEY OF KANSAS.

FRANK STRONG, PH. D., Director, *ex officio*.

ERASMUS HAWORTH, PH. D., Superintendent and Geologist.

EDGAR H. S. BAILEY, PH. D., Chemist.

UNIVERSITY COUNCIL.

THE CHANCELLOR OF THE UNIVERSITY, *Chairman.*

WILLIAM CHASE STEVENS, *Secretary.*

Professors and heads of departments of the schools of the University.

THE FACULTIES.

The Faculty of each school is made up of the professors and heads of departments offering work in that school, together with other instructors whose work is chiefly in that school.

Each Faculty is the legal governing body in all matters connected *exclusively* with that school.

OFFICERS OF INSTRUCTION AND ADMINISTRATION.

The officers of instruction and administration in the University are divided into the following groups:

PROFESSORS.

ADJUNCT PROFESSORS.

ASSOCIATE PROFESSORS.

ASSISTANT PROFESSORS.

INSTRUCTORS AND LECTURERS.

ASSISTANT INSTRUCTORS.

LIBRARIAN AND ASSISTANTS.

BUSINESS AND EXECUTIVE OFFICERS.

FELLOWS AND SCHOLARS.

PROFESSORS.

FRANK STRONG.

A. B., 1884, A. M., 1893, PH. D., 1897, (Yale).

Chancellor of the University, and President of the Faculties,
1902.* (4 F.†) 1318 Louisiana St.

WILLIAM HERBERT CARRUTH.

A. B., 1880, (University of Kansas).

A. M., 1889, PH. D., 1893, (Harvard).

Vice-president of the Faculties, and Professor of Germanic Languages and Literatures, 1882; 1879.

(28 F.) 1342 Louisiana St.

* The date after each title indicates the year of appointment to the present rank; a second date denotes the year of first appointment in the University, when that fact is not indicated by the first date.

† Abbreviations:

B=Blake Hall.

C=Chemistry Building.

D=Dick Building Studios.

F=Fraser Hall.

G=Green Hall.

L=Spooner Library.

M=Medical Hall.

Mu=Museum of Natural History.

N=North College.

R G=Robinson Gymnasium.

S=Snow Hall.

Sh=Fowler Shops.

FRANCIS HUNTINGTON SNOW.

A. B., 1862, A. M., 1865, PH. D., 1881, (Williams).

LL. D., 1890, (Princeton).

*Professor of Organic Evolution, Systematic Entomology,
and Meteorology, 1901; 1866. (Mu.) 1345 Louisiana St.*

EPHRAIM MILLER.

A. B., 1855, A. M., 1858, PH. D., 1895, (Allegheny).

Professor of Mathematics and Astronomy, 1875; 1874.

(23 and 25 F.) 1244 Tennessee St.

JAMES WOODS GREEN.

A. B., 1866, A. M., 1886, (Williams).

Dean of the School of Law, and Professor of Law, 1878.

(G.) 637 Tennessee St.

FRANK OLIN MARVIN.

A. B., 1871, A. M., 1874, (Allegheny).

*Dean of the School of Engineering, and Professor of Civil
Engineering, 1882; 1875.*

(1st floor, B.) 1603 Massachusetts St.

EDGAR HENRY SUMMERFIELD BAILEY.

PH. B., 1873, (Yale).

PH. D., 1883, (Illinois Wesleyan).

*Professor of Chemistry and Metallurgy, and Director of
Chemical Laboratories, 1883. (C.) 1329 Ohio St.*

ALEXANDER MARTIN WILCOX.

A. B., 1877, PH. D., 1880, (Yale).

Professor of Greek Language and Literature, 1885.

(18 F.) 1605 Vermont St.

LUCIUS ELMER SAYRE.

B. S., 1897, (University of Michigan).

PH. G., 1866, PH. M., 1896, (Philadelphia).

*Dean of the School of Pharmacy, and Professor of Phar-
macy, 1885. (C.) 1323 Ohio St.*

LEWIS LINDSAY DYCHE.

A. B., B. S., 1884, A. M., 1886, M. S., 1888, (University of
Kansas).*Professor of Systematic Zoölogy, 1889; 1883.*

(Mu.) Southeast of City Limits.

FRANK WILSON BLACKMAR.

PH. D., 1889, (Johns Hopkins).

Dean of the Graduate School, and Professor of Sociology and Economics, 1889.

(13 F.) 1115 Ohio St.

CHARLES GRAHAM DUNLAP.

A. B., 1883, A. M., 1899, (Ohio Wesleyan).

LITT. D., 1892, (Princeton).

Professor of English Literature, 1890; 1887.

(14 F.) 925 Kentucky St.

CARL ADOLPH PREYER, (Vienna).

Professor of Piano, Counterpoint, Canon, and Fugue, 1892.

(N.) 922 Indiana St.

OLIN TEMPLIN.

A. B., 1886, A. M., M. S., 1890, (University of Kansas).

Dean of the College of Liberal Arts and Sciences, and Professor of Philosophy, 1893; 1884.

(1 F.) 1025 Missouri St.

EDWIN MORTIMER HOPKINS.

A. B., 1888, PH. D., 1894, (Princeton).

Professor of Rhetoric and English Language, 1893; 1889.

(22 F.) 1201 Tennessee St.

FRANK HEYWOOD HODDER.*

A. B., 1883, PH. M., 1883, (University of Michigan).

Professor of American History and Political Science, 1893; 1891.

(13 F.) 1115 Louisiana St.

ERASMUS HAWORTH.

B. S., 1881, M. S., 1884, (University of Kansas).

PH. D., 1888, (Johns Hopkins).

Professor of Geology, Mineralogy, and Mining, and Superintendent of the Geological Survey, 1894; 1892.

(S.) 1503 Massachusetts St.

ARTHUR TAPPAN WALKER.

A. B., 1887, (University of New York City).

A. M., 1892, (Vanderbilt).

PH. D., 1898, (University of Chicago).

Director of the Summer Session, and Professor of Latin Language and Literature, 1897.

(17 F.) 1647 Louisiana St.

* Absent on leave, spring term, 1907-'08.

WILLIAM CHASE STEVENS.

B. S., 1885, M. S., 1893, (University of Kansas).

Professor of Botany, 1899; 1889.

(9 and 10 S.) 1121 Louisiana St.

ARVIN SOLOMON OLIN.

A. B., 1892, (Ottawa University).

A. M., 1894, (University of Kansas).

Professor of Education, 1899; 1893.

(12 F.) 1134 Louisiana St.

WILLIAM ALEXANDER GRIFFITH.

(Academy Julien, Paris).

Professor of Drawing and Painting, 1899.

(S.) 1144 Indiana St.

EUGÉNIE GALLOO.

B. L., 1892, (University of Michigan).

Académie de Paris, Brevet, 1881, Sorbonne, 1884, (University of France).

A. M., 1895, (University of Kansas).

Professor of Romance Languages and Literatures, 1900; 1892.

(27 F.) 1324 Louisiana St.

WILBUR CORTEZ ABBOTT.

A. B., 1892, A. M., 1903, (Wabash College).

B. Litt., 1897, (Oxon).

Professor of European History, 1902.

(G.) 1116 Louisiana St.

WILLIAM LIVESEY BURDICK.

A. B., 1882, A. M., 1884, (Wesleyan).

Ph. D., 1885, (Grant).

LL. B., 1898, (Yale).

Professor of Law, 1902; 1898.

(G.) 916 Kentucky St.

CHARLES SANFORD SKILTON.

A. B., 1889, (Yale).

Dean of the School of Fine Arts, and Professor of Musical Theory and Organ, 1903.

(N.) 947 Louisiana St.

CHARLES EDWARD HUBACH.

(Graduate of the New England Conservatory of Music; Sbriglia, Paris.)

Professor of Voice, 1903.

(N.) 1232 Louisiana St.

JOHN ELOF BOODIN.

A. B., 1895, A. M., 1896, (Brown).

Ph. D., 1899, (Harvard).

Professor of Philosophy, 1904.

(12 F.) 1026 Ohio St.

IDA HENRIETTA HYDE.

B. S., 1891, (Cornell).

Ph. D. 1896, (Heidelberg, Germany).

Professor of Physiology, 1905; 1899.

(M.) 1126 Louisiana St.

WILLIAM HAMILTON JOHNSON.

A. B., 1885, A. M., 1892, (University of Kansas).

Professor of Education, and High-school Visitor, 1905,
1903.

(3 F.) 1201 Oread Ave.

HENRY BYRON NEWSON.

B. S., 1883, Ph. D., 1892, (Ohio Wesleyan).

Professor of Mathematics, 1905; 1890.

(24 F.) 1702 Massachusetts St.

GEORGE HOWARD HOXIE.

A. B., 1893, A. M., 1896, (Union University).

M. D., 1901, (University of Zurich).

*Professor of Internal Medicine, and Dean of the Clinical
Department of the School of Medicine*, 1905; 1902.

Rosedale, Kan.

JAMES NAISMITH.

A. B., 1887, (McGill University).

M. D., 1898, (Gross Medical College).

Professor of Physical Education, and Chapel Director,
1906; 1898.

(R. G.) 1635 Massachusetts St.

MARSHALL ALBERT BARBER.

A. B., 1891, (University of Kansas).

A. M., 1894, (Harvard).

*Professor of Bacteriology and Pathology, and Director of
the Clinical Laboratories*, 1906; 1895.

Rosedale, Kan.

SAMUEL JOHN HUNTER.

A. B., A. M., 1893, (University of Kansas).

Professor of Entomology, 1906; 1896.

(6 and 7 S.) 1309 Ohio St.

WILLIAM EDWARD HIGGINS.

B. S., 1888, LL. B., 1894, (University of Kansas).

Professor of Law, 1906; 1899.

(G.) 1238 Ohio St.

CLARENCE ERWIN McCLUNG.

PH. G., 1892, A. B., 1896, A. M., 1898, PH. D., 1902, (University of Kansas).

Professor of Zoölogy, 1906; 1897.

(2d floor, S.) 1209 Ohio St.

PERLEY F. WALKER.

B. M. E., 1896, (University of Maine).

M. M. E., 1901, (Cornell).

Professor of Mechanical Engineering, 1906; 1905.

(Sh.) 1301 Ohio St.

MERVIN TUBMAN SUDLER.

PH. D., 1899, (Johns Hopkins).

M. D., 1901, (College of Physicians and Surgeons, Baltimore).

Professor of Anatomy and Gynecology, and Dean of the Scientific Department of the School of Medicine, 1906; 1905.

(M.) 1037 Tennessee St.

ROBERT KENNEDY DUNCAN.

A. B., 1892, (Toronto).

Professor of Industrial Chemistry, 1906.

(C.) 1237 Tennessee St.

JOHN FAIRBAIRN BINNIE.

A. M., 1882, (University of Aberdeen).

Professor of Surgery, and Chief of the Surgical Staff of the Eleanor Taylor Bell Memorial Hospital.

EDWARD G. BLAIR.

A. B., 1887, (University of Kansas).

M. D., 1889, (Columbia).

Clinical Professor of Surgery.

JACOB BLOCK.

M. D., 1879, (Medical College of Ohio).

Professor of Genito-urinary Surgery.

JULIUS BRUEHL.

M. D., 1883, (University of Würzburg).

Clinical Professor of Internal Medicine.

WILLIAM J. FRICK.

M. D., 1888, (Kansas City Medical College).

Clinical Professor of Surgery.

S. S. GLASSCOCK.

M. D., 1887, (Rush Medical College).

Professor of Neurology.

GEORGE M. GRAY.

M. D., 1879, (Kansas City Medical College).

Clinical Professor of Surgery.

JEFFERSON DAVIS GRIFFITH.

M. D., 1871, (University of the City of New York).

Clinical Professor of Surgery.

GEORGE F. HAMEL.

PH. G., 1880, (St. Louis College of Pharmacy).

M. D., 1888, (Beaumont Hospital Medical College).

Clinical Professor of Surgery.

HENRY O. HANAWALT.

M. D., 1873, (Medical College of Ohio).

Professor of Neurology, and Head of the Department.

PETER D. HUGHES.

A. M., 1890, (Taylor University).

M. D., 1884, (Fort Wayne College of Medicine):

Clinical Professor of Surgery.

GEORGE CLARK MOSHER.

M. D., 1882, (Kentucky School of Medicine).

Professor of Obstetrics, and Head of the Department.

FRANKLIN E. MURPHY.

M. D., 1893, (University of Pennsylvania).

Professor of Internal Medicine.

JOHN WALTER PERKINS.

A. B., 1882, M. D., 1886, (Harvard).

Professor of Surgery (Surgical Diagnosis).

JOSEPH E. SAWTELL.

M. D., 1886, (College of Physicians and Surgeons, Baltimore).

Professor of Rhinolaryngology, and Head of the Department.

EDWARD W. SCHAUFFLER.

A. B., 1862, A. M., 1875, (Williams College).

M. D., 1868, (Columbia).

Clinical Professor of Internal Medicine.

ROBERT T. SLOAN.

A. B., 1883, A. M., 1886, (University of Missouri).

M. D., 1884, (Kansas City Medical College).

Professor of Internal Medicine, and Head of the Department.

PRESTON STERRETT.

M. D., 1900, (Ensworth Medical College).

Clinical Professor of Internal Medicine.

JOHN H. THOMPSON.

M. D., 1875, (Georgetown University).

Professor of Ophthalmology, and Head of the Department.

ISADORE JULIUS WOLF.

M. D., 1887, (Munich).

Professor of Internal Medicine.

ADJUNCT PROFESSORS.

LUCIEN IRA BLAKE, A. B., PH. D.

Chief Consulting Engineer of the Submarine Signal Company, Boston, Mass.

Adjunct Professor in the Department of Physics, 1907-'08.

LYMAN ABBOTT, D. D., LL. D.

Editor *The Outlook*.*Adjunct Professor. Lecturer on The Christianity of Christ, in Annual University Bible Institute, 1908.*

NORMAN DUNCAN.

Formerly Wallace Professor of Rhetoric and Oratory in Washington and Jefferson College, Washington, Pa.

Adjunct Professor in the Department of English Language and Rhetoric, 1907-'08.

GEORGE BURTON ADAMS, PH. D.

Professor of History in Yale University.

*Adjunct Professor in the Department of European History,
1907-'08.*

CALVIN THOMAS, A. M., LL. D.

Professor of Germanic Languages and Literature, Columbia University.

Adjunct Professor in the Department of German, 1907-'08.

CLARENCE CASE GODDARD, M. D.

Physician in Charge Evergreen Place Sanitarium, Leavenworth.

Adjunct Professor in the Department of Neurology.

SIMON B. LANGWORTHY, M. D.

Gynecologist to the Cushing Hospital, Leavenworth.

Adjunct Professor in the Department of Gynecology.

CHRISTIAN B. STEMEN, M. D.

Professor of Surgery and vice-Dean, Fort Wayne Medical College, 1880-1896.

Adjunct Professor in the Department of Surgery.

ASSOCIATE PROFESSORS.

MILES WILSON STERLING.

A. B., 1883, A. M., 1893, (University of Kansas).

Associate Professor of Greek, 1901; 1883.

(18 F.) 1129 Louisiana St.

RAPHAEL DORMAN O'LEARY.

A. B., (University of Kansas, 1893; Harvard, 1895).

Associate Professor of English, 1901; 1896.

(22 F.) 1106 Louisiana St.

HANNAH OLIVER.

A. B., 1874, A. M., 1888, (University of Kansas).

Associate Professor of Latin, 1905; 1890.

(17 F.) 802 Tennessee St.

ELMER FRANKLIN ENGEL.

A. B., 1892, (University of Kansas).

A. M., 1898, (Harvard).

Associate Professor of German, 1905; 1892.

(28 F.) 1211 Kentucky St.

SAMUEL CHARLES EMLEY.

A. B., 1899, (University of Kansas).

M. D., 1902, (Rush Medical College).

Associate Professor of Pathology, 1905.

(S.) 1302 Tennessee St.

CHARLES MOREAU HARGER.

L. H. D., 1901, (Bethany).

Director and Lecturer, Course in Journalism, 1905.

Abilene, Kan.

SELDEN LINCOLN WHITCOMB.

A. B., 1887, (Iowa College).

A. M., 1893, (Columbia).

Associate Professor of English Literature, 1905.

(22 F.) 1026 Ohio St.

HAMILTON PERKINS CADY.

A. B., 1897, PH. D., 1903, (University of Kansas).

Associate Professor of Chemistry, 1905; 1899.

(C.) 1600 Kentucky St.

FRANK JOHNSON HALL.

M. D., 1897, (Kansas City Medical College).

Associate Professor of Clinical Pathology, and Director of the Pathological Laboratory, 1905.

Rosedale, Kan.

EDGAR GEORGE FRAZIER.

PH. B., 1900, (Tabor), 1901, (University of Chicago).

Associate Professor of Public Speaking and Debate, 1905; 1901.

(25, 5th floor, F.) 831 Tennessee St.

WILLIAM UNDERHILL MOORE.

A. B., 1900, A. M., 1901, LL. B., 1902, (Columbia).

Associate Professor of Law, 1906.

(G.) 401 W. Pinckney St.

MARTIN EVERETT RICE.

B. S., 1891, M. S., 1893, (University of Kansas).

Associate Professor of Physics and Electrical Engineering, 1906; 1892.

(1st floor, B.) 1223 Vermont St.

RALPH WALDO CONE.

A. B., 1895, (University of Kansas).

A. M., 1897, (Harvard).

Associate Professor of Sociology and Economics, 1906; 1899.

(13 F.) R. F. D. No. 9.

L. D. HAVENHILL.*

PH. C., 1893, PH. M., 1894, (University of Michigan).

B. S., 1903, (University of Kansas).

Associate Professor of Pharmacy, 1906; 1899.

WILLIAM CHRISTIAN HOAD.

B. S., 1898, (University of Kansas).

Associate Professor of Civil Engineering, 1906; 1900.

(32 F.) 113 Park St.

JOHN NICHOLAS VAN DER VRIES.

A. B., 1896, A. M., 1899, (Hope).

PH. D., 1901, (Clark).

Associate Professor of Mathematics, 1906; 1901.

(23 F.) 832 Kentucky St.

RALPH EMERSON BASSETT.

A. B., 1889, A. M., 1890, (Harvard).

Associate Professor of Romance Languages, 1906; 1903.

(27 F.) 746 Ohio St.

HERBERT ALLAN RICE.

C. E., 1897, (Ohio State University).

Associate Professor of Civil Engineering, 1905.

(35 F.) 615 Henry St.

B. J. DALTON.

B. C. E., 1890, (University of Kansas).

Associate Professor of Civil Engineering, 1906.

(32 F.) Indiana St.

CLINTON MASON YOUNG.

B. S. in Mining, 1904, (Case).

Associate Professor of Mining Engineering, 1906.

(Basement, F.) 407 W. Hancock St.

RAYMOND ALFRED SCHWEGLER.

A. B., 1899, (Brown).

A. M., 1907, (Ottawa University).

Associate Professor of Education, 1907.

1108 Vermont St.

CARL LOTUS BECKER.

B. L., 1896, PH. D., 1907, (University of Wisconsin).

Associate Professor of European History, 1907; 1902.

(G.) 1134 Mississippi St.

* Absent on leave, 1907-'08.

FREDERICK HORATIO BILLINGS.

A. B., 1896, (Leland Stanford).

A. M., 1897, (Harvard).

PH. D., 1901, (Munich).

Associate Professor of Botany and Bacteriology, 1907.

(25 S.) 1536 New Hampshire St.

HAL FOSTER.

A. B., 1880, (University of Alabama).

M. D., 1882, (University of the City of New York).

Associate Professor of Rhinology and Gynecology.

WILLIAM FRICK.

B. S., 1879, A. M., 1895, (Central Wesleyan).

M. D., 1884, (St. Louis Medical College).

Associate Professor of Dermatology, and Head of the Department.

DON CARLOS GUFFEY.

A. B., 1899, (University of Missouri).

M. D., 1905, (University of Pennsylvania).

Associate Professor of Obstetrics and Gynecology.

EARNEST J. LUTZ.

M. D., 1891, (College of Physicians and Surgeons, St. Louis).

Associate Professor of Internal Medicine.

WILLIAM L. McBRIDE.

M. D., 1901, (Rush Medical College).

Associate Professor of Dermatology.

ERNEST F. ROBINSON.

A. B., 1893, (University of Kansas).

M. D., 1896, (University of Pennsylvania).

Associate Professor of Surgery, and Attending Surgeon to the Eleanor Taylor Bell Memorial Hospital.

ROBERT McEWEN SCHAUFFLER.

A. B., 1893, (Williams College).

M. D., 1896, (Columbia).

Associate Professor of Surgery, and Attending Surgeon to the Eleanor Taylor Bell Memorial Hospital and the Mercy Hospital.

JOHN N. SCOTT.

Ph. G., 1887, (University of Kansas).

M. D., 1896, (University Medical College, Kansas City).

Associate Professor of Electrotherapeutics, and Head of the Department.

FRANK H. WEISS.

Ph. G., 1893, (Northwestern).

M. D., 1901, (Columbia).

Associate Professor of Pediatrics, and Head of the Department.

NIMROD POLK WOOD.

M. D., 1881, (St. Louis Medical College).

Associate Professor of Internal Medicine.

ASSISTANT PROFESSORS.

FRANK EMERSON WARD.

(State Normal, Indiana.)

Superintendent of Fowler Shops and Shop Instruction,
1899; 1889. (Sh.) 1236 Oread Ave.

ARCHIBALD HOGG.

A. B., 1894, LL. B., 1896, (University of Kansas).

Assistant Professor of Philosophy, 1899.

(12 F.) 1227 Ohio St.

CHARLES MORGAN STERLING.

A. B., 1897, (University of Kansas).

Assistant Professor of Pharmacognosy, 1901.

(41 C.) 923 Indiana St.

ALBERTA LINTON CORBIN.

A. B., 1893, (University of Kansas).

Ph. D., 1902, (Yale).

Assistant Professor of German, 1901.

(28 F.) 1108 Ohio St.

FREDERICK NEWTON RAYMOND.

A. B., 1896, (University of Kansas).

A. M., 1897, (Columbia).

Assistant Professor of English, 1901.

(22 F.) 811 Mississippi St.

MARGARET LYNN.*

B. S., 1889, (Tarkio).

A. M., 1900, (University of Nebraska).

Assistant Professor of English, 1901.

RICHARD McNAMEE FREEMAN.

E. E., 1900, (Lehigh).

Assistant Professor of Electrical Engineering, 1901.

(Sh.) 642 Louisiana St.

FRANK EGBERT BRYANT.

B. L., 1899, A. M., 1901, (University of Michigan).

Assistant Professor of English, 1902.

(22 F.) 1201 Tennessee St.

GEORGE JUSSEN HOOD.

B. S., 1902, (University of Kansas).

Assistant Professor of Mechanical Drawing, 1902.

1715 Vermont St.

DAVID FORD McFARLAND.

A. B., 1900, A. M., 1901, (University of Kansas).

M. S., 1903, (Yale).

Assistant Professor of Chemistry, 1903; 1900.

(C.) 802 Mississippi St.

ARTHUR JEROME BOYNTON.

A. B., 1901, (Harvard).

A. M., 1902, (Columbia).

Assistant Professor of Sociology and Economics, 1903.

(13 F.) 1104 Tennessee St.

CHARLES HAMILTON ASHTON.

A. B., 1887, (Union).

A. M., 1893, (Harvard).

Assistant Professor of Mathematics, 1903.

(24 F.) 1202 Ohio St.

ALBERT KEMP HUBBARD.

Ph. B., 1901, (Yale).

Assistant Professor of Civil Engineering, 1904.

(32 F.) 1227 Ohio St.

CHARLES IVES CORP.

B. S., 1903, (University of Kansas).

Assistant Professor of Mechanical Engineering, 1904.

(Sh.) 114 W. Lee St.

* Absent on leave, 1907-'08.

EDWIN FISKE STIMPSON.

B. S., 1890, (University of Kansas).

Assistant Professor of Physics, 1905; 1901.

(B.) 926 Indiana St.

MARY COOLIDGE FISH.

(Sargent Normal School of Physical Training.)

Assistant Professor of Physical Education, 1905; 1903.

(R. G.) 1215 Oread Ave.

LOUIS EUGENE SISSON.*

A. B., 1904, (Leland Stanford).

Assistant Professor of Rhetoric, 1905; 1904.

(22 F.)

WILLIAM JACOB BAUMGARTNER.

A. B., 1900, A. M., 1901, (University of Kansas).

Assistant Professor of Zoölogy and Histology, 1905; 1904.

(S.) 1601 Tennessee St.

HENRY OTTO KRUSE.

A. B., 1894, A. M., 1903, (University of Kansas).

Assistant Professor of German, 1905; 1904.

(28 F.) 1540 Kentucky St.

ELISE NEUEN SCHWANDER.

A. B., 1898, (University of Kansas).

Assistant Professor of Romance Languages, 1905.

(27 F.) 1324 Louisiana St.

WILLIAM CLARENCE LANSDON.

A. B., 1888, (Kansas Normal College).

Manager of Athletics, 1905.

(R. G.) 709 Mississippi St.

CHARLES HENRY GRAY.

B. L., 1895, M. L., 1896, (University of Michigan).

Ph. D., 1904, (University of Chicago).

Assistant Professor of Rhetoric, 1905.

(22 F.) 1000 Ohio St.

WALLACE NOTESTEIN.*

A. B., 1900, (Wooster).

A. M., 1903, (Yale).

Assistant Professor of European History, 1905.

* Absent on leave, 1907-'08.

FRANCIS WILLIAM BUSHONG.

A. B., 1885, A. M., 1888, (Franklin and Marshall).

S. D., 1900, (College of Emporia).

Assistant Professor of Chemistry, 1905.

(C.) 1609 Vermont St.

JAMES DYNAN NEWTON.

A. B., 1891, A. M., 1895, (Holy Cross).

M. E., 1895, (Cornell).

Assistant Professor of Civil Engineering, 1906.

(32 F.) 713 Rhode Island St.

HERBERT WILLIAM EMERSON.

Ph. C., 1901, B. S., 1902, (University of Michigan).

Assistant Professor of Pharmacy, 1906; 1903.

(25 C.) 300 West Lee St.

CHARLES COCHRAN.

(University of Colorado.)

Assistant Professor of Mechanical Drawing, 1906.

1117 Tennessee St.

LEON NELSON FLINT.

A. B., 1897, (University of Kansas).

Lecturer in Journalism, 1906.

(3 and 5 F.) Cor. Missouri and Quincy Sts.

FRANK EVERETT JONES.

(Armour Institute.)

Assistant Professor of Carpentry and Pattern-making, 1903.

(Sh.) West of City Limits.

FRANK GREENE BATES.

B. L., 1891, (Cornell).

Ph. D., 1899, (Columbia).

Assistant Professor of American History and Political Science, 1907.

(13 F.) 512 Louisiana St.

CLARENCE CORY CRAWFORD.

A. B., 1903, A. M., 1904, (University of Kansas).

Ph. D., 1906, (University of Wisconsin).

Assistant Professor of European History, 1907.

(11 F.) 1322 Tennessee St.

ALFRED DIEHL SCHOCH.

B. S., 1900, (Pacific University).

Ph. D., 1904, (Cornell).

Assistant Professor of Romance Languages, 1907.

(27 F.) 815 Indiana St.

EARL WALTER MURRAY.

A. B., 1904, (University of Kansas).

Assistant Professor of Latin, 1907.

(17 F.) 1345 Tennessee St.

HENRY LOUIS JACKSON.

B. S., 1905, (Massachusetts Institute of Technology).

Assistant Professor of Chemistry, in Charge of Foods.

(C.) 1202 Ohio St.

CLARA HOLST.

PH. D., 1903, (Christiania).

Assistant Professor of German, 1907.

(28 F.) 1108 Ohio St.

DANIEL LINDSEY THOMAS.

A. B., 1900, A. M., 1902, (Center College).

PH. D., 1905, (Princeton).

Assistant Professor of English Language, 1907.

(22 F.) 1104 Tennessee St.

JAMES EDWARD TODD.

A. B., 1867, A. M., 1870, (Oberlin).

Assistant Professor of Geology and Mineralogy, 1907.

(S.) 1000 Illinois St.

ADOLPH ZIEFLE.

PH. C., 1894, B. S. (Phar.), 1907, (University of Michigan).

Assistant Professor of Pharmacy, 1907.

(C.) 1245 Rhode Island St.

CHARLES ROLPHO OSHWALD.

B. S., 1906, (North Dakota Agricultural College).

Assistant Professor of Mechanical Engineering, 1907.

(Sh.) 1301 Ohio St.

ELIOT BOARDMAN.

A. B., 1904, (Harvard).

Assistant Professor of Romance Languages, 1907.

(27 F.) 1134 Mississippi St.

ROBERT DALLAS LANDRUM.

B. S., 1904, (Rose Polytechnic).

Assistant Professor of Chemistry, 1907.

(C.) 1321 Tennessee St.

PRESSLEY ADAMS GLENN.

A. B., 1898, (University of Kansas).

A. M., 1901, (Highland University).

Assistant Professor of Entomology, 1907.

(S.) 1415 Kentucky St.

HARRIET GREISSINGER.

Mus. B., 1895, (University of Kansas).

Assistant Professor of Piano, 1907; 1902.

(N.) 1108 Ohio St.

LULU GARDNER.

A. B., 1905, (University of Kansas).

Assistant Professor of English Literature, 1907; 1903.

(22 F.) 1325 Tennessee St.

BLANCHE LYONS.

(New England Conservatory of Music.)

Assistant Professor in Voice, 1907; 1904.

(D.) 936 New Hampshire St.

ROBERT J. CURDY.

M. D., 1895, (Washington University).

Assistant Professor of Ophthalmology.

MAX GOLDMAN.

M. D., 1901, (Kansas City Medical College).

Assistant Professor of Pediatrics.

JESSE E. HUNT.

M. D., 1902, (Western Reserve University).

Assistant Professor of Pediatrics.

CHARLES H. LIDIKAY.

M. D., 1894, (University of Louisville).

Assistant Professor of Ophthalmology.

HENRY H. LOOK.

M. D., 1898, (Marion Sims College, St. Louis).

Assistant Professor of Ophthalmology.

RUSSELL A. ROBERTS.

A. B., 1881, A. M., 1886, (Marysville [Tenn.] College).

M. D., 1887, (Medical College of Indiana).

Assistant Professor of Surgery (Rectal Surgery).

EDWARD H. THRAILKILL.

M. D., 1890, (Kansas City Medical College).

Assistant Professor of Surgery (Rectal Surgery).

JOHN S. WEAVER.

M. D., 1897, (College of Physicians and Surgeons, Chicago).

Assistant Professor of Ophthalmology.

INSTRUCTORS.

GEORGE WILLIS HANSON.

Forge Instructor, 1899.

(Sh.) R. F. D. No. 10.

EUGENE SMITH.

M. D., 1876, (Rush).

Demonstrator in Anatomy, 1903.

(Basement, M.) 736 Kentucky St.

WILLIAM KIRK TRIMBLE.

M. D., 1900, (Kansas City Medical College).

Instructor in Clinical Pathology, 1905.

Rosedale, Kan.

HELEN PHIPPS.

(American Conservatory of Music).

Instructor in Violin, 1905.

(N.) 920 Ohio St.

JAMES ANDREW CAMPBELL.

A. B., 1901, A. M., 1906, (University of Michigan).

Instructor in German, 1906.

(28 F.) 1717 Ohio St.

ULYSSES GRANT MITCHELL.

A. B., 1898, (Central Normal College).

A. M., 1907, (University of Kansas).

Instructor in Mathematics, 1906.

(24 F.) 1304 Vermont St.

ARTHUR DUNN PITCHER.

A. B., 1906, A. M., 1907, (University of Kansas).

Instructor in Mathematics, 1906.

(24 F.) 945 Vermont St.

NADINE NOWLIN.

A. B., A. M., 1903, (University of Kansas).

Instructor in Zoölogy, 1907; 1906.

(S.) 1209 Ohio St.

EDWARD MAURICE BRIGGS.

A. B., 1904, (University of Nebraska).

Instructor in German, 1906.

(28 F.) 705 Tennessee St.

FRANK RUPERT.

A. B., 1906, (University of Kansas).

Instructor in Chemistry, 1907.

(C.) 945 Vermont St.

JOHN PERCIVAL HAGERMAN.

A. B., 1906, (Occidental College).

Instructor in Physical Education, 1907.

(R. G.) 1325 Tennessee St.

JOHN BASIL CARTER.

Instructor in Physiology, 1907.

(M.) 1316 Kentucky St.

SAMUEL MOORE.

A. B., 1899, (Princeton).

Instructor in English, 1907.

(22 F.) 1108 Tennessee St.

BURTON MCCOLLUM.

B. S., 1903, (University of Kansas).

Instructor in Physics, 1907.

West City Limits.

ALFRED BUCH.

Instructor in Violoncello, 1907.

GEORGE E. BELLOWS.

A. B., 1882, A. M., 1885, (Amherst).

M. D., 1885, (College of Physicians and Surgeons, New York, now Columbia).

Clinical Instructor in Ophthalmology.

FAY P. CLARK.

M. D., 1898, (College of Physicians and Surgeons, Kansas City).

Clinical Instructor in Electrotherapeutics.

J. HOLCOMB LANING.

M. D., 1899, (University of Virginia).

Clinical Instructor in Internal Medicine.

RICHARD C. LOWMAN.

M. D., 1890, (Kansas City Medical College).

Clinical Instructor in Internal Medicine.

JOHN W. MILLER.

M. D., 1896, (Kansas City Medical College).

Clinical Instructor in Internal Medicine.

ZACHARIAH NASON.

M. D., 1888, (College of Physicians and Surgeons, Baltimore).

Clinical Instructor in Obstetrics.

AMBROSE TALBOT.

A. B., 1881, M. D., 1885, (Harvard).

Clinical Instructor in Internal Medicine.

D. W. BASHAN, M. D., Wichita, Kan.

Lecturer on Surgery.

CLAY COBURN, M. D., Kansas City, Kan.

Lecturer on State Medicine.

F. M. DAILEY, M. D., Beloit, Kan.

Lecturer on Professional Ethics.

O. J. FURST, M. D., Peabody, Kan.

Lecturer on Climatology.

W. S. HARVEY, M. D., Salina, Kan.

Lecturer on Professional Ethics.

CHARLES S. HUFFMAN, M. D., Columbus, Kan.

Lecturer on State Medicine.

M. F. JARRETT, M. D., Fort Scott, Kan.

Lecturer on Professional Training and the Correction of Ocular Defects.

W. F. KUHN, A. M., M. D., St. Joseph, Mo.

Lecturer on the Relation of the State to the Insane.

RALPH A. LIGHT, M. D., Chanute, Kan.

Lecturer on the Basis of the Right of the State to Restrict the Right of Practice.

O. M. LONGENECKER, M. D., Rosedale, Kan.

Lecturer on Therapeutics.

B. F. MORGAN, M. D., Clay Center, Kan.

Lecturer on Anesthetics.

R. J. MORTON, M. D., Green, Kan.

Lecturer on Exophthalmia Goitre.

J. E. OLDHAM, M. D., Wichita, Kan.

Lecturer on Surgery.

C. C. PAYNE, Eudora, Kan.

Lecturer on Massage and Hydrotherapy.

M. C. PORTER, M. D., Clay Center, Kan.

Lecturer on Surgical Anatomy.

D. R. PORTER, M. D., Kansas City, Kan.

Lecturer on Life Insurance.

JOHN G. SHELDON, M. D., Rosedale, Kan.

Lecturer on Surgical Anatomy.

ASSISTANT INSTRUCTORS.

MAUDE BEATRICE COOKE.

(University of Kansas).

Assistant Instructor in Piano, 1904.

(D.) 1100 Vermont St.

MAUD MILLER.

Mus B., 1898, (University of Kansas).

Assistant Instructor in Piano, 1904.

(D.) 1108 Ohio St.

JULIA RIGHTER.

Mus B., 1897, (University of Kansas).

Assistant Instructor in Piano, 1904.

(D.) 1132 Tennessee St.

LOUISE WIEDEMANN.

Mus B., 1897, (University of Kansas).

Assistant Instructor in Piano, 1904.

(D.) 835 Massachusetts St.

AUGUSTA FLINTOM.

Mus B., 1902, (University of Kansas).

Assistant Instructor in Voice, 1905.

(D.) 745 Ohio St.

LARRY M. PEACE.

A. B., 1901, (University of Kansas).

Preparator and Demonstrator in the Botanical Laboratory,
1902.

(S.) 1111 Mississippi St.

HANDEL T. MARTIN.

Assistant Curator of Paleontology, 1907; 1899.

(Mu.) 745 Arkansas St.

WILLIAM ALFRED STARIN.

A. B., 1906, (University of Kansas).

Assistant Instructor in Botany, 1907; 1906.

LALIA VIOLA WALLING.

A. B., 1905, A. M., 1907, (University of Kansas).

Laboratory Assistant in Physiology, 1905.

(M.) 945 Kentucky St.

CHARLES D. BUNKER.

Museum Assistant in Zoölogy, 1905.

(Mu.) 1717 Vermont St.

WILLIAM REES B. ROBERTSON.

A. B., 1906, A. M., 1907, (University of Kansas).

Assistant Instructor in Zoölogy, 1907.

(S.) 1037 Tennessee St.

FLORENCE HEDGER.

A. B., 1904, (University of Kansas).

Assistant Instructor in Chemistry, 1907.

(C.) 1317 Ohio St.

THOMAS HASLAM.

Assistant Instructor in Chemistry, 1907.

(C.) 1213 Ohio St.

GRACE ALTHEA HAYWARD.

A. B., 1905, (University of Kansas).

Assistant Instructor in English, 1907.

(22 F.) 1336 Tennessee St.

WENDELL WINDOM McCANLES.

A. B., 1907, (University of Kansas).

Assistant Instructor in Public Speaking, 1907.

(5th floor, F.) 1401 Kentucky St.

FRANCIS J. PERUSSE.

PH. C., 1907, (Highland Park College).

Laboratory Assistant in Pharmacy, 1907.

(C.) 1340 Vermont St.

LESLIE ALVA KENOYER.

Laboratory Assistant in Botany, 1907.

(S.) 1324 Vermont St. —

B. A. POORMAN, M. D.

Dispensary Attendant in Surgery.

FORD B. ROGERS, M. D.

Dispensary Attendant in Surgery.

LIBRARIAN AND ASSISTANTS.

CARRIE M. WATSON.

A. B., 1877, (University of Kansas).

Librarian, 1887.

(L.) 1310 Louisiana St.

EDITH M. CLARKE.

A. B., 1895, (University of Kansas).

Cataloguer, 1904.

(L.) 1210 Ohio St.

CLARA SCIOTO GILLHAM.

A. B., 1884, (University of Kansas).

Loan Desk Assistant, 1904.

(L.) 1411 Tennessee St.

MARY MAUD SMELSER.

Accession Assistant, 1904.

(L.) 940 Kentucky St.

DORA CATHERINE RENN.

Reference Assistant, 1899.

(L.) 1310 Louisiana St.

PAULINE MADDEN.

Reference Assistant, 1906.

(L.) 1345 Tennessee St.

MARY AGNES COLLINS.

A. B., 1904, (University of Kansas).

Reference Assistant, 1907.

1041 Vermont St.

BUSINESS AND EXECUTIVE OFFICERS.

EDWARD E. BROWN.

Secretary and Purchasing Agent, 1907; 1894.

(9 F.) 615 Tennessee St.

GEORGE O. FOSTER.

A. B., 1901, (University of Kansas).

Registrar of the University, 1899; 1891.

(9 F.) 1245 Louisiana St.

EBEN F. CROCKER.

Superintendent of Buildings and Grounds, 1902.

(Repair Shop.) 932 Maine St.

EARL B. CRONEMEYER.

Accountant, 1907.

(9 F.) 1108 Connecticut St.

MINNIE STELLA MOODIE.

Secretary to the Chancellor, 1902.

(4 F.) Southeast Lawrence.

ELEANOR MAUDE KIBBEY.

A. B., 1895, (William Woods College).

Assistant Registrar, Clinical Department, School of Medicine, 1905.

Rosedale, Kan.

FELLOWS AND SCHOLARS.

EFFIE BERNICE JONES.

Fellow in English Literature, 1907.

ELMER BIRDELL GIFT.

A. B., 1907, (University of Kansas).

Fellow in American History, 1907.

EMMA M. PALMER.

A. B., 1905, (University of Kansas).

Fellow in German, 1907.

FRANK J. KLINGBERG.

A. B., 1907, (University of Kansas).

Fellow in European History, 1907.

EDGAR L. TAGUE.

Fellow in Chemistry, 1907.

MYRTLE MINNIE GRAFFIN.

A. B., 1907, (University of Kansas).

Fellow in French, 1907.

CLARENCE J. PRIMM.

A. B., 1906, (Park College).

A. M., 1907, (University of Missouri).

Fellow in Sociology, 1907.

FRANK ULYSSES GRANT AGRELIUS.

A. B., 1906, (University of Kansas).

Fellow in Botany, 1907.

HELEN M. CLARKE.

A. B., 1903, A. M., 1907, (University of Kansas).

Fellow in Philosophy, 1907.

RALPH C. SHUEY.

B. S., 1907, (University of Kansas).

Parke, Davis & Co. Fellow in Industrial Chemistry, 1907.

FRED W. FORAGHER.

1905, (University of Kansas).

Alden B. Spear Fellow in Industrial Chemistry, 1907.

EARL FINLAY CLARK.

A. B., 1907, (University of Kansas).

Fellow in Zoölogy, 1907.

ALBERT MORTON THOROMAN.

Fellow in Education, 1907.

LILLIAN BUNTON.

A. B., (University of Kansas).

*Sara T. D. Robinson Research Scholar at Marine Biological
Laboratory, Woods Hole, Mass., 1907.*

CORA EMMETT DOLBEE.

Marcella Howland Memorial Scholar, 1907.

GERTRUDE WALTERS.

Lucinda Smith Buchan Memorial Scholar, 1907.

MABEL EGGLESTON.

Association of Collegiate Alumnae Scholar, 1907.

PART II.
THE UNIVERSITY.

(33)

THE UNIVERSITY.

ORGANIZATION.

The work of the University is comprehended in the schools and departments mentioned below. Everything pertaining to the University organization is under the control of the Board of Regents. Each school and department is also under the control of the Chancellor and a separate faculty of instruction.

DEPARTMENTS OF INSTRUCTION.

I.—The Graduate School.

II.—The College of Liberal Arts and Sciences.

III.—The School of Engineering.

1. The Civil Engineering Course.
2. The Electrical Engineering Course.
3. The Mechanical Engineering Course.
4. The Mining Engineering Course.
5. The Chemical Engineering Course.

IV.—The School of Fine Arts.

1. The Course in Piano Playing.
2. The Course in Organ Playing.
3. The Course in Violin Playing.
4. The Course in Violoncello Playing.
5. The Course in Voice Culture.
6. The Course in Drawing and Painting.
7. The Course in Elocution.

V.—The School of Law.

VI.—The School of Pharmacy.

1. The Short Course in Pharmacy.
2. The Three-year Course in Pharmacy.
3. The Collegiate Course in Pharmacy.

VII.—The School of Medicine.

VIII.—The Summer Session.

Institutions Connected with the University and under its Control.

IX.—The Library.

X.—The Gymnasium.

XI.—The Museums.

XII.—The University Geological Survey.

XIII.—The High-school Visitation.

THE GRADUATE SCHOOL. In the College of Liberal Arts and Sciences and the School of Engineering there are advanced courses leading to the degrees of master of arts and master of science, doctor of philosophy, and the higher engineering degrees. These courses have been organized into a Graduate School, open to graduates of this and, under certain conditions, other universities and colleges.

THE COLLEGE OF LIBERAL ARTS AND SCIENCES. The College of Liberal Arts and Sciences offers instruction in literature, science, and the arts, leading to the degree of bachelor of arts. It is the central department of the University and the foundation upon which all the rest are built. In it are included many of the courses offered in the other departments of the University, and there is no distinct separation of faculties, nearly all being included in the Faculty of the College of Liberal Arts and Sciences. The courses of study are mainly elective and presume four years of residence work.

THE SCHOOL OF ENGINEERING offers courses in civil, electrical, mechanical, mining and chemical engineering, leading to the degree of bachelor of science, requiring four years of residence work.

THE SCHOOL OF LAW offers three years of legal instruction, leading to the degree of bachelor of laws.

THE SCHOOL OF FINE ARTS offers courses in piano, organ, violin and violoncello playing, voice culture, drawing, painting, and elocution.

THE SCHOOL OF PHARMACY offers two, three and four years' work in pharmaceutical study.

THE SCHOOL OF MEDICINE offers a complete four-year medical course. The work of the first two years is done in the laboratories at the University. The work of the second two years is done in the clinical laboratories at Rosedale.

THE SUMMER SESSION (six weeks) is intended to meet the wants of teachers and others who wish to pursue collegiate study but are unable to attend the regular sessions of the University. Collegiate credit is allowed for certain courses offered.

THE LIBRARY. The library of the University is regarded as the center of the instructional life of the University. It is used to supplement the instruction in all departments, and also for

wide reading for purposes of general information by students of the University.

THE GYMNASIUM. The gymnasium is the center of the physical education of the students in general, and also of the athletics of the University.

THE MUSEUMS. The museums are used for the storing of collections valuable from a scientific point of view, and also for the purpose of supplementing the scientific instruction of the University.

THE GEOLOGICAL SURVEY. The Geological Survey is connected with the University only by the fact that the director, superintendent and chemist are officers in the University. The work is done by these officers, and especially by the superintendent, with whom almost the entire management rests, without extra compensation. It is regarded as work which the University should do for the state, and the appropriation for the survey is used entirely for the ordinary expenses of the survey.

THE HIGH-SCHOOL VISITATION. In order that the University may fulfil its function as the head of the public-school system of the state, it becomes necessary for it to maintain this position by means of an organic relation to the parts. To this end, a regular University officer, known as the High-school Visitor, devotes his entire time to visiting the high schools, for the purpose of consulting with principals and superintendents, and suggesting courses of study and equipment necessary to increase the efficiency of the schools and make of them consistent educational instruments in the life of the state.

GOVERNMENT.

The legislature of 1889 passed an act providing for the government of the University and repealing all former legislation bearing upon the same subject. This act declares that the government of the University shall be vested in a board of seven Regents, six of whom shall be appointed by the governor and confirmed by the senate, and whose term of office shall be four years; that the Board of Regents shall be a body corporate, under the name of "The Regents of the University of Kansas," and as such may sue and be sued, make contracts, and hold and transfer property, both real and personal, for the University.

The Board of Regents is also invested with the power to elect

a Chancellor, who shall be the chief officer of the University, and president of the Board of Regents, with the full power of a regent; to appoint professors, assistants, tutors; to increase and diminish their number as the interest of the University may require; to employ officers and employees, as in their judgment the needs of the University require.

The Board is also empowered to confer such degrees and grant such diplomas as are usually conferred and granted by institutions of learning.

DISCIPLINE.

That the generosity of the state may not be abused, and that perfect justice may be done all who are earnestly striving to make the best possible use of the opportunities offered, there is but a single requirement, *unexceptional deportment and strict attention to University duties.*

THE UNIVERSITY AND THE STATE.

The University of Kansas is an integral part of the free public-school system of the state. It was established by an act of the legislature of 1864, and its object, as defined by that act, is to "provide the inhabitants of the state with the means of acquiring a thorough knowledge of the various branches of literature, science, and the arts." In realizing the object thus set for it, the University stands in direct connection with the high schools of the state. It begins where the high school ends, and thus completes, for so many as avail themselves of the advantages, the thorough education which the state endeavors to provide. Persons who have completed, in any high school or other institution of learning, the work required in preparation for the University, are admitted to its privileges without examination. For this reason the high schools and academies of the state have in general arranged their courses of study in accordance with the University requirements. Though the University was established and is maintained, primarily, for the sons and daughters of Kansas, it also opens its doors, at very moderate tuition, to the young men and women of other states.

At the head of the public educational system of Kansas, the University endeavors to encourage whatever may contribute to the higher intellectual and moral interests of the state. Believing that the strength and value of the University are measured by its service to the state at large, and wishing to reach as

many of the citizens as possible in a helpful and stimulating way, the authorities cordially invite all who desire to pursue courses of study or investigation to connect themselves with the University. All who are seeking special information or self-culture and the highest type of citizen life and influence should feel that, by the generosity of the state, advice and information are freely placed at their command.

HISTORY AND LOCATION.

The idea of a State University in Kansas dates from the early days of Kansas territorial government. Each of the constitutions adopted for the territory of Kansas during the period of its memorable struggles provided for the establishment of an institution of higher learning, to be supported by public funds. The last of these, which became, on the admission of Kansas to the Union, the constitution of the state, declares that "provision shall be made by law for the establishment, at some eligible and central point, of a State University, for the promotion of literature and the arts and sciences."

By an act of Congress, approved January 29, 1861, the day on which Kansas was admitted to statehood, seventy-two sections of land were set apart and reserved for the use and support of a State University. The state accepted the trust, and in 1863 the legislature selected the city of Lawrence as the location for the institution. One year later the legislature passed an act organizing the University and giving to it the name of "The University of Kansas." A charter was immediately drawn up, and the government of the institution was vested in a Board of Regents, appointed by the governor.

The Board thus appointed held its first meeting on March 21, 1865, and decided to open a preparatory department as soon as the citizens of Lawrence should provide rooms for that purpose. This the citizens undertook to do, and by the middle of September, 1866, they were enabled, by the aid of gifts from various individuals and organizations, to erect the building now known as North College. The first Faculty of the University had been elected by the Board of Regents in July of the same year, and on the 12th of September the University was opened to the young men and women of the state.

In 1876 the legislature of the state established a normal department, which, though successful, was discontinued in 1885. The Law School was opened in October, 1878, and the School of

Pharmacy was established in 1885. A course in engineering was arranged as early as 1873, but remained a part of the collegiate department until 1891, when the School of Engineering was organized and the collegiate department became known as the School of Arts. During the same year the preparatory department was discontinued, and the departments of music and art were combined to form the School of Fine Arts. The Graduate School was organized in 1896; and in 1899 the preparatory medical course, which had been offered in the collegiate department since 1880, was extended into a regular medical course, constituting the work of the School of Medicine. In 1904 the Board of Regents changed the name of the School of Arts to the College of Liberal Arts and Sciences.

Rev. R. W. Oliver, the first Chancellor of the University, resigned his position after one year of service, and was succeeded by Gen. John Fraser. In 1874 Dr. James Marvin was made Chancellor. His resignation, in 1883, was followed by the election of Dr. Joshua A. Lippincott. Prof. Francis H. Snow, who had been a member of the Faculty from the beginning, was elected Chancellor in 1889. In 1901, on account of failing health, Chancellor Snow resigned. Mr. W. C. Spangler, a graduate of the University and a member of the Board of Regents, was appointed to act as Chancellor until the election of a regular incumbent. Frank Strong, Ph. D., was elected in April, 1902, and assumed the office August 1 of that year.

The University is situated on a projection of the bluffs bordering the Kansas river valley, known as Mount Oread. The view from the campus and buildings includes a broad and varied expanse of valley and upland, dotted with evidences of the productiveness of the soil and the thrift of the people.

Lawrence is a city of about 12,000 inhabitants, and is situated forty miles west of Kansas City. It is a healthful city, and offers many advantages as a place of residence for those desiring the benefits afforded by the University.

BUILDINGS AND GROUNDS.

The University campus comprises 163.5 acres at Lawrence and 7.5 acres in the campus of the Medical School, at Rosedale. There are fifteen University buildings, ten of which were erected by the state and five by private gifts. Thirteen of these buildings are used for the purposes of instruction, the remaining two being the heating plant and the Chancellor's residence.

NORTH COLLEGE.

This structure was the first building to be erected. It is fifty feet square, three stories high, and contains eighteen rooms. It was completed in 1866, from which time until 1872 the entire work of the University was carried on within its walls. In 1872 Fraser Hall was completed, and North College was for a time closed. In 1890 it was again opened, and, until the end of the school year 1893-'94, was used by the School of Law. It is at present used by the School of Fine Arts.

FRASER HALL.

This building was erected in 1872, better to accommodate the growing school and to relieve the crowded rooms of North College. It is 246 feet in extreme length, 98 feet wide in center, wings 62 feet each. There are fifty-four rooms in this building, of which one, the main audience room, containing an electric pipe-organ, is 94 feet long and 56 feet wide. This room has a seating capacity of 1200. There are also in Fraser Hall eighteen lecture-rooms, each large enough to accommodate classes of seventy-five to eighty students. In this building are located the executive offices of the University, including the Chancellor's office, the office of the Secretary, and the office of the Registrar. The building is named in honor of Gen. John Fraser, the first active Chancellor of the University.

MEDICAL HALL.

This building is a structure in the form of a T, the main part, extending east and west, being 80 by 35 feet, and the L north of this 40 feet square. The basement is used for work in anatomy. The large, well-lighted room of the second floor is the physiological laboratory. The east wing of this floor is occupied as a lecture-room, and is capable of seating seventy-five students. Other rooms are used for private laboratories, library, etc.

SNOW HALL.

This structure was erected in 1886, from a \$50,000 appropriation by the legislature. It is 110 feet in length by 100 feet wide, two stories in height, each 16 feet in the clear, is provided with an attic of 12 feet, and with a basement almost entirely above ground. The geological department occupies the two southeast rooms of the first floor. The departments of zoölogy and botany occupy the large west room of the first floor for laboratory purposes. The entire second floor is devoted to laboratories for

advanced work in botany and zoölogy. The west room of the attic is used for the geological collections. The south room is the botanical museum. The department of drawing and painting occupies the remainder of the attic. On the first floor of the east half is a large lecture-room. This room has accommodations for 200 students. The building is named in honor of Professor and ex-Chancellor Francis Huntington Snow.

SPOONER LIBRARY.

This building was erected in 1894, at a cost of \$75,000, by the generosity of William B. Spooner, of Boston. Its length is 112 feet and extreme width 50 feet. The building is two stories high, with a basement, the greater part of which is above ground. On the first or main floor are located the general reading-room, a newspaper room, and the Librarian's and Cataloguer's offices. The reading-room is admirably arranged and lighted. In the newspaper room are kept the county and city weeklies and dailies published within the state. In addition, dailies published in all the larger cities of the United States are kept on file. The second floor of the building is also devoted to library purposes. In the basement are seminary rooms used for private study of students in the various departments. The building is lighted throughout by electricity. Its every appointment is modern and its facilities and usefulness unexcelled.

BLAKE HALL.

This is of Chateau Renaissance style, three stories high, of Cleveland, Ohio, sandstone, and was completed September, 1895, at a cost of \$58,000. Besides a general lecture-room seating 100, a smaller lecture-room seating 36 and two classrooms seating 30 each, there are office-rooms, a department library and reading-room and three large general laboratory rooms. Accessible to these are a battery-room and a supply-room and workshop. There are also eight smaller rooms, most of which are adapted to physical research and are provided with water, gas and electricity; and each basement laboratory room has one or more stone piers, built up from bed-rock, giving instrument supports free from vibrations of the building. Heavy electrical circuits are so numerous and so planned that to almost any laboratory room and to both lecture-rooms several electrical currents from the dynamo station can be delivered. A thirty-cell storage battery is available for laboratory work. The general equipment contains a large number of demonstration and laboratory in-

struments. The building is heated and ventilated by the Sturtevant forced-draft system. The building is named for Prof. Lucien Ira Blake.

FOWLER SHOPS.

This building was completed in 1899, at a cost of \$21,000, and is the gift of Mr. George A. Fowler, of Kansas City, Mo., as a memorial of his father. It is devoted to the mechanical and technical instruction of the School of Engineering and to the electric-light and power plants of the University. Its present educational equipment represents about \$30,000, appropriated by the legislature. The building is of native stone, 224 feet long by 50 feet average width, two stories high, with attic and a handsome tower. It encloses 32,000 square feet of floor space for instructional purposes. It contains boiler- and engine-rooms equipped and adapted for boiler and engine testing, with generators aggregating 200 horse-power, for lighting and power for all the University buildings; forge room, metal- and wood-working departments, dynamo and transformer laboratory, fitted with recent types of appropriate machines, so distributed as to give comprehensive and exact technical instruction. Two rooms, 50x30 feet, are devoted to the engineering laboratories of the civil and mechanical departments. The pumping machinery of the water and fire-protection system of the University is also placed in the engine-room.

THE CHEMISTRY AND PHARMACY BUILDING.

This building was completed in 1900 at a cost of \$70,000. The material used is native limestone, laid in horizontal courses, with recessed pointing. The building is arranged specifically for laboratory purposes for the departments of chemistry and pharmacy. The entire length of the building is 187 feet, and the greatest width 70 feet. The ground plan shows a central portion (devoted to offices, private laboratories, supply-rooms, balance-rooms, and smaller recitation-rooms) and two wings. The building is three stories in height, with a basement of the same height as each of the stories above; beneath the basement floor there is an air-space of four feet, down to the solid rock on which the foundations are laid. The system of heating and ventilation, which has been arranged with special care, includes a fan-blower, run by electric power, which forces tempered air over steam-coils and thence into the laboratories and lecture-rooms. The air thus brought into the rooms is carried out by

hoods on the sides of the rooms, which are connected with nine-inch tiles, terminating in the chimneys above the roof, each hood being ventilated by an independent flue.

THE NATURAL HISTORY MUSEUM BUILDING.

The spacious building for the museum of natural history, which was erected at a cost of \$75,000, furnishes a safe and beautiful home for the natural-history collections, estimated to be worth \$300,000. The upper floor is devoted to the collections in entomology and paleontology. The remainder of the building is used for the exhibition of mammals and birds. The offices are occupied by the curator of mammals, birds, and fishes, and the curator of the entomological collections. The workrooms of the taxidermist are in the basement.

GREEN HALL.

This building, erected at a cost of \$65,000, was occupied by the School of Law in the fall of 1905. It is named for Dean James Woods Green. The design is a clean composition in the American Renaissance. The central figure, which is also the main approach, is in the form of a portico, having fluted columns enriched with Ionic capitals. These, together with the columns, cornice, and other ornamental parts, are of gray terra-cotta. The body of the structure is of gray pressed brick. The general dimensions of the building are 60x120 feet. Entering the building through the front vestibule, which is paved, a few broad steps lead to the main floor, while on either side are ample stairways leading to the basement. On this floor are a large lecture-room, trial-court and study-rooms, toilet- and cloak-rooms. On the next floor are large classrooms, the offices of the Dean and members of the Faculty, and additional cloak-rooms. The second story, which is reached by broad stairways, is practically given over to the library and reading-room, which is about 40x116 feet, with a high coved ceiling, giving a free story of nearly twenty-two feet. Adjoining this room, and, in part, directly connected with it, are small study-rooms and private offices. The interior finish of the building above the basement is of quarter-sawed oak, with panel wainscot in the halls and up the stairs.

THE ROBINSON AUDITORIUM-GYMNASIUM.

The legislature of 1905 appropriated \$100,000 for a building for a gymnasium and auditorium. This building is 178 feet long by 144 feet wide at the wings, with an average width of 90 feet, three stories, including the basement. In the basement are arranged locker-rooms, baths, dressing-rooms for the athletic teams, a baseball cage, and a swimming-pool. The first story contains a gymnasium for men and another for women, a trophy- and reception-room, and offices for the directors of the work for men and women, respectively. The second story contains a clear floor space 70x127 feet. A running-track is built in the gallery which is placed entirely around this floor. When the apparatus is removed, this floor will be used for auditorium purposes, and will seat 3000 people. Around this auditorium, and opening out from it, are rooms for handball, boxing, wrestling, fencing, a room for special classes, and a Faculty room. The arrangement and equipment of this building are modern in every particular. It is one of the finest gymnasiums in the West.

THE ELEANOR TAYLOR BELL MEMORIAL HOSPITAL

Is the collective term applied to the group of buildings now being erected on the property donated to the University by Dr. Simeon B. Bell, of Rosedale, and named in memory of his wife. The medical pavilion is completed. This consists of a two-story brick building, containing beds for twenty-four medical patients, and a hydro-therapeutic and massage department. There are four single rooms, two small wards, and one large ward. The building has a large convalescents' room, and roomy porches looking out over the Turkey Creek valley and toward Kansas City, Kan. The situation is elevated and pleasant, an ideal home for the sick.

THE CLINICAL LABORATORY.

This forms an intrinsic part of the Eleanor Taylor Bell Memorial Hospital, and is a brick building 50x100 feet, of three stories. It has concrete floors and a general fire-proof construction. The teaching laboratory is a room 100x30 feet. From this open four small work-rooms for instructors. There are three lecture-rooms, a library, offices for the Dean and Superintendent, and also a morgue and an animal room. This building crowns

the hill, and will be surrounded by five or six hospital pavilions, similar to the medical pavilion already built.

THE ENGINEERING BUILDINGS.

The legislature of 1907 appropriated \$150,000 for a civil and mechanical engineering building and equipment, \$50,000 for a mining engineering building, and \$50,000 for additional shops. These buildings are now in course of erection.

UNIVERSITY EXERCISES AND ORGANIZATIONS.

UNIVERSITY ALUMNI ASSOCIATION.

THE ALUMNI ASSOCIATION is composed of all persons holding degrees granted by the University, though active membership is limited to those who pay annual dues. An endowment membership is maintained for those who subscribe to the endowment fund. The control of the affairs of the association is in the hands of a board of ten directors. A general secretary is employed, whose office is at the University, and who has charge of the publications of the association, and keeps, so far as possible, a complete record of facts concerning alumni. He also superintends the printing plant owned by the association, from which is issued the *Graduate Magazine*. This magazine is sent to all active members of the association. The regular meetings of the association occur during commencement week of each year, at which time the annual alumni address is delivered at the University by some one from among the alumni.

OFFICERS OF THE ALUMNI ASSOCIATION.

JAMES OWEN, '93, l '95, Cripple Creek, Colo., *President*.

EDWARD G. BLAIR, '87, Kansas City, Mo. *Vice-president*.

L. N. FLINT, '97, Lawrence. *Secretary*.

GEO. O. FOSTER, '01, Lawrence. *Treasurer*.

DIRECTORS.—Frank P. Mac Lennan, '75, *President*; Olin Templin, '86; R. D. O'Leary, '93; Rose Morgan, '94; Clyde Miller, '96, l '97; Wilbur Gardner, '95, l '96; Anna Drake McClung, '96; Harry L. Raymond,* '86; Harlan F. Graham, '86; Richard T. Hargreaves, '02.

RELIGIOUS.

CHAPEL EXERCISES. Exercises are held in the University chapel every morning from 10 to 10:15. Though attendance is not required of students, all are cordially invited, and the services are made as attractive and profitable as possible. They consist of the doxology, Scripture reading, prayer, a hymn, and occasional addresses by the Chancellor and others. On Friday

* Deceased.

morning the chapel exercises are held from 10 to 10:30, at which addresses are given by speakers from abroad or by members of the Faculty of the University. During the academic year of 1907-'08, to May 1, addresses were delivered by Chancellor Frank Strong, Hon. W. R. Stubbs, Hon. E. T. Fairchild, Hon. W. H. Rossington, Hon. T. A. McNeal, Hon. James A. Troutman, Hon. H. M. Beardsley, Rev. L. K. Wells, Hon. Silas Porter, Prof. W. H. Carruth, Judge Harry G. Kyle, Judge H. L. McCune, Hon. Walter Williams, Hon. J. B. Case, Prof. George B. Adams, of Yale, Hon. J. L. Bristow, Dr. Lyman Abbott, Dr. J. P. Cochran, Hon. Justice Burch.

On Tuesday mornings addresses were delivered by the following members of the University Faculty: Professors Blackmar, Sudler, Schwegler, Haworth, Murray, Engel, Becker, Hodder, Young, Hopkins, Dyche, Bates, Blake, M. E. Rice, Thomas, C. M. Sterling, and Dean Briggs, of Harvard, Professor Chittenden, of Yale, Dr. J. A. Francis and Dr. Lyman Abbott, of New York city.

UNIVERSITY VESPER SERVICE. On the last Sunday afternoon of each month students and Faculty join in an hour of quiet devotion. The service is largely musical, with a brief address, a simple and vital talk on one of the great questions of life. The music, aside from the congregational singing, is furnished by the Vesper Chorus, conducted by the professor of voice training. The speakers for the past year have been: Chancellor Frank Strong, Dean J. P. de B. Kaye, of Topeka, Rev. T. S. Young, of Topeka, Dr. Lyman Abbott, of New York, Dr. John P. Forbes, of Brooklyn.

YOUNG MEN'S CHRISTIAN ASSOCIATION. The Young Men's Christian Association is an organization composed of 325 Christian men of the University, banded together for the purpose of preserving and advancing the spiritual interests of the institution. This object is attained through the work of the various departments and through the helpful Christian fellowship of the young men in their intercourse with one another.

Religious services are held weekly, at which the average attendance has been 75 men. Occasionally on Sunday afternoon a mass meeting, addressed by a prominent speaker, has proved invaluable in deepening the spiritual life of the men who attended. The Bible study department is the very life of the organization. Through its initiative and coöperation the association reports an average attendance of 450 men for the past year, in the classes led by members of the Faculty, the head of the

Bible chair, and the student leaders. The association also has organized mission-study classes, out of which come the men who offer themselves as missionary educators and evangelists.

A large house is leased in the center of the student district, in which the religious meetings of the association are held. The parlors are open to the men of the University at all times and committee meetings of various student organizations often convene there. The association employs a general secretary, who devotes half of his time to the work.

Members of the association meet students at the trains and assist them in finding rooms and boarding-places. The employment bureau will render all assistance possible to students desiring to earn a part of their expenses. There will be sent to any address, on application, a handbook giving valuable information to prospective students. Address the general secretary of the association.

YOUNG WOMEN'S CHRISTIAN ASSOCIATION. The Young Women's Christian Association is an organization composed of 300 young women of the University, united for the attainment of the most perfect development of Christian character among the young women of the institution. The work of the association is divided into ten departments, each in charge of a permanently organized committee. The mid-week religious services of the association are arranged by the devotional committee, which provides able speakers upon subjects of practical interest and value to young women. The missionary committee conducts six classes in the study of missions, and the association, through this committee, assists materially in the support of one of its former members as a Y. W. C. A. secretary in India. There are also sixteen classes in systematic Bible study, pursuing courses in the life of Christ, in Old Testament history, and in Acts and the Epistles.

The association seeks to develop the social as well as the spiritual life of its members. The social committee therefore holds a prominent place in the association work. Receptions to new students are held at the opening of the fall term, and are followed by numerous social gatherings throughout the year. The association employs a general secretary, who gives all of her time to work among the young women.

The members of the association gladly assist young women just entering the University in securing boarding- and rooming-places, and, when desired, employment. The students' handbook, which is published in conjunction with the Young Men's

Christian Association, will be sent to any address upon application to Miss Nadia Thomas, 1340 Tennessee street, Lawrence, Kan.

UNIVERSITY RELIGIOUS UNION. This association aims to unite students and Faculty of all shades of religious belief into one body for the study, discussion and practical working out of religious and philosophical problems. It holds meetings twice a month.

RELATION TO CITY CHURCHES. The churches of Lawrence unite in extending to the University students a cordial invitation to enter with them into Christian fellowship, and endeavor to make them feel that, irrespective of church membership, they are welcome to all the privileges which the church affords. To this end the various churches hold receptions for the students at the beginning of each year, the pastors preach special sermons to the students from time to time, and the young people's societies arrange for social gatherings to which the students especially are invited. There are also organized, in the principal Sunday-schools of the city, special classes for University students, a number of these classes being in charge of University professors.

By these means the students are brought closely in touch with the religious life of Lawrence, which may well be called a city of churches. A religious census of the student body during the past few years shows that an average of eighty-seven per cent. of the students are church adherents, fifty-six per cent. are church members, and a large number are actively engaged in the work of the various churches and organizations connected therewith throughout the city.

THE BIBLE CHAIR. April 1, 1901, the Woman's Board of Missions of the Church of Christ established a chair of biblical instruction at Lawrence for the benefit of University students. A site was purchased on Mount Oread, adjoining the University campus, where, in a building erected for the purpose, the work is carried on.

There is no organic relation between the Bible chair and University. Its support rests entirely upon private gifts. No fees are charged. The privileges are offered to all students, without regard to their religious affiliations, and the courses are arranged to meet their convenience.

The instruction is non-sectarian. The purpose of the work is to bring students in touch with the book which more than any

other has made civilization, and which bears the message best adapted to meet man's moral and spiritual needs.

The courses include studies in both the Old and New Testaments, and the history of missions. The Hebrew language is offered to such as are interested or who are preparing for the ministry. Wallace C. Payne, A. B., A. M., (Bethany College), B. D., (Yale University), occupies the chair. Mrs. W. C. Payne is associated with him.

During the seven years now closing about 1300 students have taken advantage of the opportunity thus given to acquaint themselves more fully with the Bible.

Beginning October 1, 1908, studies will be offered by Professor Payne in the "Life of Christ," "Paul's Life and Letters," "Peter's Life and Writings," and "Old Testament History." Short courses of three to eight lectures will be given on "Israel and the Great Nations of the Past," "The Wisdom Literature of the Old Testament," "The Psalms," "The Old Testament Prophets," "The Man, Christ Jesus," "Teachings of Jesus," "The First Century Church," "The Writings of John," and "The Growth of the English Bible."

Mrs. W. C. Payne will lecture upon "The Women of the Bible," "The History of Missions," "The Lives of Great Missionaries," and "The Miracles and Parables of Jesus."

In addition to the studies given at the lecture-room, 1300 Oread avenue, during the school year 1908-'09, special attention will be given group classes for Bible study in private, fraternity and sorority houses.

Any one desirous of further information may address Prof. W. C. Payne, 1300 Oread avenue, Lawrence, Kan.

WESTMINSTER HOUSE. This institution has been established by the Presbyterians of Kansas to afford the advantages of religious instruction, pastoral care and the atmosphere of a Christian home to their young people attending the University of Kansas. It was opened in 1905, under the charge of Francis Allen Wilber, A. B., A. M., D. D., (Wooster), B. D., (Princeton), as principal, assisted by Mrs. Wilber and Miss Sage. It has no organic connection with the University.

While denominational in its organization and control, this institution exerts no sectarian influence, but opens its classes and social features to all alike. No fees are charged, and all are welcome.

Courses of study are offered in "Old Testament History,"

"Hebrew Poetry," "Messianic Prophecy," "The Life of Christ," "The Teachings of Jesus," "Apostolic History and Literature," "History of the English Bible," "Modern Missions, both Home and Foreign, as Related to the World Movements of To-day," and a "Students' Round Table" for the discussion of current topics and subjects bearing upon university life. The following courses will be offered to special classes: "Pedagogy as Applied to Bible Teaching," "The History and Art of Hymnology," and "Beacon Lights of Church History."

The purpose of these courses is to offer to students of the University the advantages of thorough instruction in those branches of study which are distinctive features of the curriculum in denominational colleges. It is the intention to maintain the standard of instruction upon a par with that of the departments of the University, and to promote, by personal acquaintance and sympathetic hospitality, that effective pastoral care which was contemplated by the founders of Westminster House.

During the year 170 students have taken class work, some at Westminster House, and others at club-houses or the homes of fraternities and sororities.

All correspondence in regard to courses of study or pastoral matters should be addressed to Rev. Francis A. Wilber, Westminster House, 1125 Tennessee street, Lawrence, Kan.

SOCIAL AND LITERARY.

ASSOCIATION OF THE LADIES OF THE FACULTY. The women connected with the University as instructors and the wives of instructors form an association whose purpose is to promote the moral and social welfare of the students, and to further an acquaintance between themselves and the students. To this end, besides general receptions and gatherings for the discussion of questions of common interest, twice a month, on Fridays, the Ladies of the Faculty give an afternoon tea for the young women of the University. A committee of the association meets the young women at the University during the opening week of the year, and assists them in finding suitable boarding- and rooming-places. Students are always cordially welcome in the homes of the Faculty.

THE PHI BETA KAPPA SOCIETY. The Kansas Alpha chapter of this society was organized in April, 1890. The object of the society is, primarily, the promotion of scholarship in the University. To this end, a portion of the members of the graduating class of the College, never to exceed one-fourth, who have

made high records for scholarship in their University studies, are elected to membership.

LITERARY SOCIETIES. There are four of these: The Snow, the Senate, the X Y Z, and the Adelphic. The objects which they are intended to promote are, to cultivate literary taste and the spirit of sound criticism, to develop the necessary qualities of public speaking, and to learn the methods and rules of legislative bodies. The students of the School of Law maintain two debating societies, the Kent Club and the Cooley Club.

GERMAN CLUB. All students in the German department are eligible to membership in the German Club, which meets once a week in the German recitation-room. The object of the club is to furnish the student special opportunity to familiarize himself with the spoken language and to promote an interest in all that is German. Musical and literary programs are rendered each week by students, and the meetings are conducted exclusively in German. There are besides this club several smaller conversational circles, presided over by the instructors in the department. A special feature in connection with the club is the German play, which is given each year by the students of the department.

THE QUILL CLUB. An organization of students and instructors especially interested in English composition, which meets to hear and discuss original productions presented by members and others.

FRENCH CLUB. The instructors and students in the French department compose the *Cercle Français*, which meets once a week to present a brief literary program, reviews of articles in the leading French magazines, and reports on French topics. French only is used, as one of the chief objects of the club is to provide better opportunities than can be offered in the classroom for the practice of the spoken language. Another opportunity for such practice is found in the French play, which is given towards the close of the year by the students of the department.

THE GREEK SYMPOSIUM consists of the instructors and students of the Greek department, who meet once a month for the reading of papers and discussion of topics which are either too general or too special for class work. The meetings are held in the evening, at the home of one of the instructors, and the special program is followed by a social hour.

SCIENTIFIC.

THE SIGMA XI SOCIETY. The Iota chapter of this scientific honorary society was established at the University in 1890. The society confers the honor of election to membership upon students who have shown special aptitude along scientific lines, especially with regard to research work. This chapter holds monthly meetings for the reading and discussion of scientific papers, and is the center about which the scientific interests of the University are gathered.

BIOLOGICAL CLUBS. The instructors and students in each of the biological departments meet weekly, in separate clubs, for the discussion of matters relating to their respective branches of biological science.

CHEMICAL CLUB. This is composed of the instructors and advanced students in the department of chemistry and pharmacy. It holds weekly meetings, at which the following are presented: Reports on research work by instructors and students; reports on scientific meetings and associations; reviews of new books and important articles in chemical journals; notices of important inventions and new chemical processes.

CIVIL ENGINEERING SOCIETY. This is maintained by instructors and students. It holds monthly meetings and is frequently addressed by practicing engineers, besides maintaining a good program of papers and discussions.

ELECTRICAL ENGINEERING SOCIETY. An organization of character and purposes similar to the above.

MECHANICAL ENGINEERING SOCIETY. This is composed of instructors and students, and holds weekly meetings devoted in the main to reviews and discussion of current engineering literature, with occasional addresses by practicing engineers.

DEBATING AND DRAMATIC.

DEBATING COUNCIL. The council is made up of representatives chosen from the literary societies of the University, and under its supervision are held all preliminary and interstate debates. At present, annual debates are held with the University of Iowa and the Kansas colleges.

DRAMATIC CLUBS. The students of the University maintain two dramatic clubs for the study and presentation of modern plays. Membership in these clubs is open to all students and is secured by dramatic trials held at stated intervals.

MUSICAL.

ORCHESTRA. Young men and women of the University form an Orchestra each year to furnish music for the chapel, commencement, and special convocations. The Orchestra has been reorganized and enlarged, and is under the direction of the Dean of the School of Fine Arts. Semiannual concerts are given.

MEN'S GLEE CLUB. The Men's Glee Club has been reorganized and placed upon a stable foundation. It is under the direction of the head of the department of voice training of the School of Fine Arts. The general control of the club, as to financial obligations and tours, is in the hands of a committee of the University Council. The semiannual concerts, given in December and May, are important University events. A tour of the state is made during February.

GIRLS' GLEE CLUB. The Girls' Glee Club is a new organization, under the direction of the head of the department of voice training of the School of Fine Arts. The club consists of twenty voices, selected by the director. An annual spring concert is given, and music is furnished at the chapel exercises and other student gatherings.

VESPER CHORUS. The Vesper Chorus is composed of about thirty of the leading singers of the city and University, and takes part in the monthly vesper services. It is under the direction of the professor of voice training.

BAND. The University Band is a permanent organization, fully uniformed, and directed by a professional leader. The band furnishes music at the various athletic contests held at the University and for other student gatherings.

THE FESTIVAL CHORUS. The Festival Chorus is composed of musical people of Lawrence and students of the University, mainly from the clubs named above. The director is the Dean of the School of Fine Arts. The Festival Chorus undertakes the chorus work for the annual spring music festival at Lawrence.

THE MANDOLIN CLUB. This club is organized for the purpose of combining the musical elements of the University interested in the mandolin, guitar, and banjo. This club gives semi-annual concerts and makes a tour of the state.

OPERA. An opera is given each year by students of the voice department, accompanied by the University Orchestra. The opera for 1907 was "Patience," by Gilbert and Sullivan.

CONCERTS, ADDRESSES, AND ART EXHIBITIONS.

CONCERTS AND RECITALS, 1907-'08.

- OCTOBER Piano recital, by Agnes Lapham.
- NOVEMBER Song recital, by Elizabeth Wilson.
 Student recital.
 Song recital, by Rhea Carson and Robert Carson.
- DECEMBER Piano recital, by Rudolph Ganz.
 Annual opera, "Patience."
 Christmas music of "The Messiah."
 Piano recital, by Harold Henry.
 Annual Christmas concert.
- JANUARY Violin recital, by Helen Phipps.
 Annual winter concert, by the University Orchestra.
 Organ recital, by Charles S. Skilton.
 Student recital.
- FEBRUARY Piano recital, by Edward B. Perry.
 Song recital, by C. Edward Hubach.
 Piano recital, by Augusta Cottlow.
 Student recital.
- MARCH Two-piano recital, by Carl Preyer and Charles S. Skilton.
 Student recital.
 Song recital, by Blanche Lyons.
 Annual concert of the University Glee Club.
- APRIL Song recital, by Augusta Flintom.
 Piano recital, by Maude Cooke.
 Student recital.
 Piano recital, by Carl Preyer.
- MAY Annual concert of the University Mandolin Club.
 Student recital.
 May festival—three concerts:
 Song recital, by David Bispham.
 Orchestra concert, by the Chicago Symphony Orchestra.
 Choral concert, by Festival Chorus and Chicago Orchestra.
 Graduating recitals.
 Annual commencement concert.
- JUNE Commencement organ recital, by Charles S. Skilton.

ADDRESSES.

The following University addresses were delivered at the University during the academic year 1907-'08; all University students were admitted to these addresses without charge:

JUNE 2, 1907. Baccalaureate sermon, John Heyl Vincent, D. D., bishop of the Methodist Episcopal Church.

JUNE 3, 1907. Phi Beta Kappa address, Max Winkler, Ph. D., of the University of Michigan.

JUNE 4, 1907. Alumni address, John Adams Prescott, of the class of 1888.

JUNE 5, 1907. Commencement address, Jonathan Prentiss Doliver, LL. D., United States senator from Iowa.

SEPTEMBER 20, 1907. Opening address, Judge Charles A. Smart.

OCTOBER 25, 1907. Consul-general George Horton. Subject: "The Greeks of To-day."

OCTOBER 28, 1907. Mr. J. P. Raymond, Kansas City, Mo. Subject: "Plants and Trees of Southern Climates."

JANUARY 13-17, 1908. Prof. George B. Adams, of Yale University. Subject: "The Origin of the English House of Commons."

JANUARY 20, 1908. Dr. L. R. Briggs, dean of Harvard College. Subject: "Purification of Collegiate Athletics."

FEBRUARY 17, 1908. Dr. R. H. Chittendon, dean of Sheffield Scientific School, of Yale University. Subject: "Nutrition."

FEBRUARY 24 - MARCH 2, 1908. Dr. L. I. Blake, Submarine Signal Company, of Boston. Subject: "Electricity."

FEBRUARY 28, 1908. Hon. E. W. Howe, editor of the *Atchison Globe*. Subject: "A Trip Around the World."

MARCH 16-22, 1908. Dr. Lyman Abbott, of New York city. Subject: "The Christianity of Jesus Christ."

MARCH 17, 1908. Prof. Charles Knapp, of Columbia University. Subject: "The Roman Theater."

MARCH 26, 1908. Dr. J. W. Cochran, secretary Presbyterian Educational Board, of Philadelphia.

APRIL 15-16, 1908. Prof. Calvin Thomas, of Columbia University. Subject: "Faust."

ART EXHIBITIONS.

An annual exhibition of works of art is held at the University, together with a course of lectures upon subjects related to the fine arts. During the present year the exhibition consisted of 133 paintings by leading American artists, which was open from March 4 to 28. At the close of the year there is held an exhibition of work done by pupils of the department of drawing and painting.

ATHLETIC.

ATHLETIC ASSOCIATION. This association is organized to encourage and promote the physical education and hygienic training of matriculates and graduates of the University of Kansas, and to foster and supervise athletic games, to wit, baseball, boating, football, tennis, track athletics, basket-ball, and other innocent sports, in connection with the University. Membership in the association is open to all students, graduates, officials, and members of the Faculty.

THE COUNTRY CLUB is one of the oldest University organizations. Its object is to take the students on tramps into the country surrounding Lawrence, studying the historical events associated with the vicinity, and natural objects in their own realm.

THE GOLF CLUB has its links on the University grounds. It is a self-supporting, independent organization, and membership is open to students of the University.

GENERAL ATHLETICS. The general athletics of the University include football, baseball, basket-ball, tennis, and other forms of exercise.

INTERCOLLEGIATE GAMES are held as often as deemed best, for the encouragement of *esprit de corps* among the students and a friendly rivalry between sister universities.

CONTROL. All forms of exercises, athletics and games are under the control of the director of the gymnasium and his assistants. Competitive games and athletics are encouraged to the extent of inspiring the student to develop his physical condition, but not to the extent of interfering with his studies.

THE ATHLETIC BOARD. All intercollegiate athletic contests are under the control of the University Athletic Board, composed of four students elected by the students, four Faculty members elected by the University Council, the Chancellor of the University, the president of the Athletic Association, and the pro-

fessor of physical education. The last three are *ex officio* members.

RULES. The University Council has adopted rules governing the standing of all those who represent the University in athletic contests. Good scholarship and gentlemanly conduct are required of all such contestants.

UNIVERSITY PUBLICATIONS.

THE UNIVERSITY OF KANSAS SCIENCE BULLETIN, formerly the *Kansas University Quarterly*, is maintained by the University as the medium for the publication of the results of original research by members of the University. Papers are published in it only on recommendation of the committee of publication, which committee is composed of five members of the scientific faculty. Formerly the *Quarterly* was issued at regular intervals, as indicated by the title, but numbers of the present series appear without regard to specific dates. A volume consists of about 400 pages, with the necessary illustrations. The price of subscription is three dollars a volume. Individual numbers vary in price with the cost of publication. The current volume of the present year is volume V; continuous series, volume XV. Exchanges with similar publications of other colleges or universities and learned societies are solicited. H. B. Newson is corresponding secretary. Communications should be addressed to him.

THE UNIVERSITY NEWS BULLETIN is issued weekly from the Registrar's office, for the purpose of furnishing the newspapers, high-school students and others of the state items of interest regarding University affairs. It will be sent regularly, without charge, to any one who may express a desire to receive it.

THE GRADUATE MAGAZINE is published monthly during the academic year by the Alumni Association of the University. Each volume contains the formal University addresses of the year and articles on subjects related to the University. Departments containing news matter of interest to alumni and former students are included in each number.

THE KANSAN is a newspaper published twice a week by student representatives from the various schools of the University.

THE JAYHAWKER is the annual published each year by the Senior classes of the schools of the University.

THE KANSAS LAWYER is published monthly by the students

of the School of Law, and is devoted to the interests of that school and the Kansas bar.

THE UNIVERSITY GEOLOGICAL SURVEY REPORTS are issued from time to time as material for them is gathered.

UNIVERSITY PRIZES.

THE WILLIAM J. BRYAN PRIZE FUND. Hon. William J. Bryan, of Lincoln, Neb., in 1898 presented the University \$250, to be used as follows: The sum is to be invested, and the yearly interest on the same is to be given that student presenting the best thesis on some one principle of our government. The details of the contest are entrusted to the Faculty of the University.

LECTURES OFFERED TO KANSAS COMMUNITIES.

GENERAL LECTURES.

In order that as many people of the state as possible may receive some immediate benefit from the University as an institution established for the dissemination of learning, a large number of lectures are offered to Kansas communities by the Faculty of the University. For the convenience of those wishing such services, a classified list of such lectures and addresses will be mailed free on request. These lectures are suitable for delivery under the auspices of high schools, educational, literary or religious societies. It is expected in every case that the speaker's expenses will be paid by those desiring his services. Wherever it is customary to pay something in addition, or where admission is charged, a reasonable fee should be added. In the last-mentioned case this may, if desired, take the form of a percentage of the receipts. In other cases it will depend upon circumstances and the character of the lecture. In most cases the necessary arrangements as to terms, subjects, dates and similar details may best be made with the lecturer.

UNIVERSITY EXTENSION LECTURES.

The University has for some years offered courses by members of the Faculty outside of Lawrence, particularly in connection with teachers' institutes. During the past year such work has been officially recognized by the University with regular registration and credit, and a considerable number now avail themselves of this opportunity to acquire University standing in this manner. The usual arrangement is that of ten lectures, with conferences and examination, upon the successful completion of which two hours' credit is given.

Such courses may be arranged by correspondence with the Committee on University Extension and Lectures, and such correspondence is invited from those desiring such service. It is particularly desired by the University to extend its advantages as widely as possible to the people of the state, and it is at all times glad to do this by courses or individual lectures by members of the Faculty. Such work has been found to connect itself advantageously with the city institute work with teachers, bringing them in close touch with University instruction. It offers to superintendents a desirable means of strengthening intellectual and professional interests and of conducting such outside work with definiteness of purpose and result. This is peculiarly important in drawing together more closely the various parts of the educational system of the state.

CONCERTS OFFERED TO KANSAS COMMUNITIES.

The School of Fine Arts is prepared to furnish soloists to take part in concerts, music festivals, or public celebrations, or to give entire recital programs by members of the music and dramatic faculty and the University musical organizations. The following artists may be secured: Dean Charles S. Skilton, organ and lecture recitals; Prof. Carl A. Preyer, piano; Prof. C. Edward Hubach, tenor; Mrs. Blanche Lyons, soprano; Miss Helen Phipps, violin; Prof. Edgar G. Frazier, dramatic reader; also the University Orchestra of twenty pieces, the University Glee Club, the University Mandolin Club. Address the Dean of the School of Fine Arts.

RECOMMENDATION OF TEACHERS.

The University endeavors to assist those of its graduates who desire to teach in securing positions, and at the same time to be of service to high schools, academies and colleges which may be in need of competent instructors. To this end a committee of the Faculty preserves a complete list and record of graduates who are engaged in teaching or have fitted themselves especially for such work. The University authorities are thus prepared at any time to recommend persons who are well qualified for any position that may be made vacant. In so doing, great care is exercised, the special qualifications of various teachers for the particular position in hand being in every case fully considered.

UNIVERSITY PHYSICIAN.

A University physician has been appointed better to look after sick students away from home; to consult with students in all matters relating to health, and to prevent, when possible, trivial ailments becoming serious; to provide necessary medical services gratuitously to those who are making their way through the University; to work with the University health committee in seeking out and eliminating special sources of infection, and in preventing the spread of infectious and contagious diseases among the students of the University. Dr. S. C. Emley, of the department of pathology of the School of Medicine, has been appointed by the Board of Regents University Physician.

HOSPITAL ASSOCIATION.

This is an association for the purpose of providing proper care for students who are ill in Lawrence, and also for the purpose of isolating and preventing the spread of contagious diseases. It has planned to secure the services of a physician and nurse for the year, so that this can be done effectively. It practically guarantees free treatment and hospital accommodations to every member, and the small membership fee of two dollars is a sort of sick insurance. All students are urged to join this association at time of registration.

ANALYSIS OF FOOD AND DRUGS.

The legislature in 1905 passed a bill making it the duty of the chemistry departments of the University and the State Agricultural College, under the direction of the State Board of Health, to make analyses of samples of foods and beverages collected by any county or city board of health of the state of Kansas, and to make reports upon the same.

In conformity with this law, during the last year and a half, the chemistry department of the University has examined a large number of food products, and the reports of these analyses have been published in the monthly *Bulletin* of the Board of Health. The Kansas food and drugs act of February 14, 1907, requires analyses of drugs to be made by the pharmacy department at the University of Kansas, and of food products to be made by the chemistry departments at the University and the Agricultural College. A special laboratory is being fitted up for the analysis of drugs and another for the analysis of foods. These laboratories will be completely furnished with the neces-

sary material, and a sufficient number of assistants will be employed to carry on the work expeditiously.

WATER SURVEY.

During the 1907 session of the legislature a bill was passed providing for a survey of the waters of Kansas, to be carried on under the joint auspices of the State Board of Health and the United States Geological Survey. This work contemplates the complete determination of the mineral matter in all the larger streams of the state and a study of the industrial waste and the sewage in streams.

SCIENTIFIC CONTROL OF WATERS AND SEWAGE.

There was also passed at the 1907 session of the legislature an act to preserve the purity of the waters of the state, for the protection of public health, and providing for the control by the Board of Health of municipal water-supplies and of the sewage systems of the state. Much of the work for the proper enforcement of this law and to carry out its provisions will fall to the engineering department and the chemistry department of the University, as the heads of these departments are advisory members of the State Board of Health.

ENTOMOLOGICAL COMMISSION.

The 1907 session of the legislature created the State Entomological Commission. The field-work of this commission is conducted by the departments of entomology at the University and the Agricultural College. The University has performed the work of inspecting nurseries and issuing certificates to them since the beginning of such requirements, in 1896. It has also conducted some extensive investigations in the interests of agriculture and horticulture. Under this commission the department of entomology at the University will cover a much wider field and will publish from time to time the results of its work.

BACTERIOLOGICAL EXAMINATION OF WATER.

In connection with the United States Government Hydrographical Survey, the department of bacteriology has undertaken a series of tests of water from wells and various other sources. The aim of the work is largely the determination of the extent and source of water pollution through sewage and surface drainage.

PART III.

DEPARTMENTS OF INSTRUCTION.

(65)

I. THE GRADUATE SCHOOL.

FACULTY.

FRANK STRONG, Ph. D., President.

FRANK W. BLACKMAR, Ph. D., Dean, and Professor of Sociology and Economics.

FRANCIS H. SNOW, Ph. D., Professor of Organic Evolution and Systematic Entomology.

EPHRAIM MILLER, Ph. D., Professor of Mathematics and Astronomy.

JAMES W. GREEN, A. M., Professor of Law.

WILLIAM H. CARRUTH, Ph. D., Professor of Germanic Languages and Literatures.

FRANK O. MARVIN, A. M., Professor of Civil Engineering.

EDGAR H. S. BAILEY, Ph. D., Professor of Chemistry and Metallurgy.

ALEXANDER M. WILCOX, Ph. D., Professor of Greek Language and Literature.

LUCIUS E. SAYRE, Ph. M., Professor of Pharmacy.

LEWIS L. DYCHE, M. S., Professor of Systematic Zoölogy.

CHARLES G. DUNLAP, Litt. D., Professor of English Literature.

OLIN TEMPLIN, A. M., Professor of Philosophy.

EDWIN M. HOPKINS, Ph. D., Professor of Rhetoric and English Language.

FRANK H. HODDER, Ph. M., Professor of American History and Political Science.

ERASMUS HAWORTH, Ph. D., Professor of Geology and Mineralogy.

ARTHUR T. WALKER, Ph. D., Professor of Latin Language and Literature.

WILLIAM C. STEVENS, M. S., Professor of Botany.

ARVIN S. OLIN, A. M., Professor of Education.

EUGENIE GALLOO, A. M., Professor of Romance Languages and Literatures.

WILBUR C. ABBOTT, B. Litt., Professor of European History.

WILLIAM L. BURDICK, Ph. D., Professor of Law.

CHARLES S. SKILTON, A. B., Professor of Musical Theory, History of the Fine Arts, and Organ.

- JOHN E. BOODIN, Ph. D., Professor of Philosophy.
IDA H. HYDE, Ph. D., Professor of Physiology.
WILLIAM H. JOHNSON, A. M., Professor of Education.
HENRY B. NEWSON, Ph. D., Professor of Mathematics.
GEORGE H. HOXIE, M. D., Professor of Internal Medicine.
JAMES NAISMITH, M. D., Professor of Physical Education.
MARSHALL A. BARBER, A. M., Professor of Bacteriology and Pathology.
SAMUEL J. HUNTER, A. M., Professor of Entomology.
CLARENCE E. MCCLUNG, Ph. D., Professor of Zoölogy.
WILLIAM E. HIGGINS, B. S., LL. B., Professor of Law.
PERLEY F. WALKER, M. M. E., Professor of Mechanical Engineering.
MERVIN T. SUDLER, Ph. D., M. D., Professor of Anatomy.
ROBERT K. DUNCAN, A. B., Professor of Industrial Chemistry.
MILES W. STERLING, A. M., Associate Professor of Greek.
RAPHAEL D. O'LEARY, A. B., Associate Professor of English Language.
HANNAH OLIVER, A. M., Associate Professor of Latin.
ELMER F. ENGEL, A. M., Associate Professor of German.
SAMUEL C. EMLEY, A. B., M. D., Associate Professor of Pathology.
SELDEN L. WHITCOMB, A. M., Associate Professor of English Literature.
HAMILTON P. CADY, Ph. D., Associate Professor of Chemistry.
EDGAR G. FRAZIER, Ph. B., Associate Professor of Public Speaking and Debate.
WILLIAM U. MOORE, A. M., LL. B., Associate Professor of Law.
MARTIN E. RICE, M. S., Associate Professor of Physics and Electrical Engineering.
RALPH W. CONE, A. M., Associate Professor of Sociology and Economics.
WILLIAM C. HOAD, B. S., Associate Professor of Civil Engineering.
JOHN N. VAN DER VRIES, Ph. D., Associate Professor of Mathematics.
RALPH E. BASSETT, A. M., Associate Professor of Romance Languages.
HERBERT A. RICE, C. E., Associate Professor of Civil Engineering.
B. J. DALTON, B. S., Associate Professor of Civil Engineering.
CLINTON M. YOUNG, B. S., Associate Professor of Mining Engineering.
RAYMOND A. SCHWEGLER, A. B., Associate Professor of Education.

CARL L. BECKER, Ph. D., Associate Professor of European History.

FREDERICK H. BILLINGS, Ph. D., Associate Professor of Botany and Bacteriology.

ADMINISTRATIVE COMMITTEE.

FRANK W. BLACKMAR, *Dean*.

FRANK H. HODDER.

CHARLES G. DUNLAP.

A. T. WALKER.

C. E. MCCLUNG.

PURPOSES OF THE SCHOOL.

THE Graduate School provides all the instruction in advanced subjects offered in the University. It is under the direction of the Faculty and administrative committee of the Graduate School, the Dean of the Graduate School being chairman of the administrative committee.

It was organized in 1896, mainly out of the College of Liberal Arts and Sciences and the School of Engineering, and most of the work offered by the Graduate School is given in connection with the several departments of these schools.

It is the business of the Faculty of the Graduate School to formulate courses in graduate work; to establish and maintain the requirements for all higher degrees offered by this University; to make recommendations for those degrees to the Board of Regents; and to fix such regulations as they may deem expedient for the government of the school.

REQUIREMENTS FOR ADMISSION.

Admission to the Graduate School ordinarily is granted to graduates of this University holding the bachelor's degree, and to graduates of other colleges and universities of good standing on presentation of proper evidence of scholarship and testimonials of good character.

RULES FOR GRADUATE WORK.

Graduate students, whether candidates for a degree or not, must be in regular attendance on such course or courses as may have been selected and approved, and will be required to pass all examinations, or to submit to such other regulations and requirements as may be imposed by the heads of the departments concerned. Graduate students who pursue their work in part

elsewhere must conform to the requirements imposed in each case by the administrative committee.

REGISTRATION.

When it is ascertained in what department the student desires to do his major work, the Dean will refer him to the head of that department, who will select the courses, after consultation with the student. The student will then submit the courses to the Dean, and if approved the applicant will be given a card permitting him to register in the office of the Registrar. Work to be counted as graduate work is specified in the catalogue, and must be designated as graduate on the enrolment card filed in the Registrar's office.

DEGREES GRANTED.

The University offers eight advanced degrees, viz.:

MASTER OF ARTS.	MECHANICAL ENGINEER.
MASTER OF SCIENCE.	MINING ENGINEER.
ELECTRICAL ENGINEER.	CHEMICAL ENGINEER.
CIVIL ENGINEER.	DOCTOR OF PHILOSOPHY.

MASTER OF ARTS AND MASTER OF SCIENCE.

The master's degree will be granted only after at least one full year's graduate work. A minimum of one-half year in residence at the University of Kansas shall be required for the master's degree. The candidate must have completed with high credit thirty hours of work chosen from the courses open to graduates; other courses may be offered only by the special consent of the departments concerned and of the administrative committee; but courses for which a professional certificate or diploma is given will not be counted toward this degree. Not more than sixteen hours' credit can be given in one term.

The degree of master of arts will be granted to bachelors of arts, and the degree of master of science to graduates in engineering. Students who have had special preparation in scientific studies and whose graduate work is in scientific departments may, upon recommendation of the administrative committee, receive the degree of master of science.

When the candidate is first permitted to enroll as a graduate student, he shall select the department in which his major work is to be done. The head of that department will, in consultation with the candidate, select the courses to be taken for the ensuing term. These may be confined to the department of his

major study, or may be selected from that and not more than two other departments. The decision of the head of the department shall be subject to the veto of the Dean of the Graduate School; appeal may be made from the decision of the Dean to the Graduate Faculty. If the student subsequently changes his selection of a major department, the graduate work already done shall not be counted toward the master's degree unless approved by the head of his new major department.

Not later than the 15th of May preceding the commencement at which the degree is to be conferred, he must present to the head of the department in which his chief study has been, a thesis which must embody some scholarly research on some topic connected with that study. The thesis shall be written, either in a clear, legible hand or typewritten, on bond paper of twenty pounds' weight to the ream; the paper to be cut to the size of eight inches by ten inches. One and one-half inches margin must be left on the left side of the paper, for convenience in binding.

Not more than five hours of graduate work may be done *in absentia* in candidacy for the master's degree, and this only in case of student's completing the work for the degree. The term *in absentia* applies to work not done in colleges and universities. (See exception to rule in case of Summer Session and Extension work.)

ENGINEERING DEGREES.

Graduates in engineering in this University, and masters of science who have received their degrees through the Graduate Faculty, are eligible to the professional degrees of civil engineer, electrical engineer, mechanical engineer, mining engineer, or chemical engineer, whichever is appropriate to the undergraduate course taken. Candidates for these degrees must have spent at least three years' actual time in professional practice, in positions of responsibility, in the design, construction or operation of engineering works, and must furnish detailed and satisfactory evidence as to the nature and extent of this practice.

They must submit an engineering thesis, accompanied by detailed explanations, drawings, specifications, estimates, etc., and embodying the results of their own work or observation. If approved, the thesis and all accompanying material shall be the property of the University.

All theses for any professional degree must be delivered to the Dean of the School of Engineering on or before the 15th day of May.

DOCTOR OF PHILOSOPHY.

The degree of doctor of philosophy will be granted on the ground of advanced scholarship, and the performance of independent work in some special line under the following conditions:

1. The candidate must be a baccalaureate graduate of this University or of some other college or university of good standing; or he must give satisfactory evidence to the Faculty of the Graduate School that he possesses an adequate preparation for graduate work.

2. He must make application to the Dean of the Graduate School before the 1st day of October preceding the commencement at which he intends to present himself for the degree, and must then give satisfactory evidence of his ability to read such German and French as may be necessary for the proper prosecution of his studies.

3. He must have spent at least three full college years in resident graduate work at this or some other approved university; the last year must be spent as a resident student of this University. The time spent in attaining the degree of A. M. may be counted toward satisfying this time condition.

4. He must present a thesis showing the result of original research of a high character, and must pass acceptable examinations, both written and oral, in one chief or major study and two allied, subsidiary or minor studies, not more than two of which may be in the same department. The oral examination shall be before the Faculty of the Graduate School, where he may be required to defend his thesis. The thesis, embodying the results of original research in some subject connected with his major study, must be presented to the head of the department in which the work was done not later than the 1st of May preceding the commencement at which the degree is to be conferred, and if approved by him shall be placed on file for inspection in the office of the Dean of the Graduate School for at least two weeks. If finally approved, not less than 100 printed copies must be delivered to the Librarian of the University before receiving the degree, or proper security be given for the printing of that number; provided, that if the thesis has already been printed, ten copies only shall be deposited with the Librarian.

SUMMER SESSION AND EXTENSION WORK.

With the consent of the department concerned, a student who has been fully admitted to the Graduate School may be allowed to do as much work *in absentia* as may be necessary to enable him to secure the master's degree by doing five or six hours in each of three summer sessions. This privilege will be granted only after the student's work in residence has satisfied the head of the department concerned that the student is able to do the work *in absentia*, and only to such students as have proper facilities (library or laboratory) for doing it. About half of the *in absentia* work must be done between the first and second summer sessions of residence, and most of the remainder between the second and third. Not more than five hours may be done after the third summer session. The regular requirements as to choice of studies and thesis will be enforced.

With the consent of the department concerned, students who are candidates for the master's degree may count *in absentia* work done in Extension courses given by members of the University Faculty to the extent of twelve hours, allowing two hours for each course of ten lectures.

FEES AND EXPENSES.

According to a recent act of the state legislature, an incidental fee of ten dollars, payable at time of registration, is charged Kansas students of this school. Students who matriculate for the first time pay five dollars additional. For non-residents of the state both these fees are double. A diploma fee of five dollars is required. The other expenses of students differ according to circumstances and the tastes of the student. A full statement in regard to general expenses will be found under the College of Liberal Arts and Sciences, on another page of this catalogue.

GRADUATE SCHOOL ORGANIZATIONS.

THE GRADUATE CLUB. This is an organization composed of the graduate students of the University, designed especially to bring this class of students, each of whom is largely working independently, into closer touch socially and intellectually.

OTHER ORGANIZATIONS. Students of the Graduate School are also eligible to membership in other organizations of the University, such as the literary societies, the modern language and science clubs, etc., a full account of which will be found in another part of this catalogue.

SEMINARS AND CONFERENCES.

The seminars of the Graduate School are also open under certain conditions to undergraduates pursuing advanced work.

AMERICAN HISTORY. The seminar in American history meets once a week for research work in some phase of American history.

EUROPEAN HISTORY. The seminar in European history is held twice a week throughout the year. Some period of European history is selected as the subject of special research.

HISTORY CONFERENCE. A conference of the department of European history and allied departments is held once in two weeks, from January to April.

GERMAN. The meetings average once in two weeks during the year, and advanced work is assigned and reported on.

ZOOLOGY. The meetings average once in two weeks, and problems in heredity were under consideration during the last year.

BACTERIOLOGY. The students in bacteriology have special meetings once a week.

SEMINAR OF SOCIOLOGY AND ECONOMICS. A general conference, open to graduate students, for research work in economics and sociology, meets once each week.

SEMINAR ROOMS.

THE SPOONER LIBRARY is well furnished with facilities for seminar and departmental work. Separate rooms for seminar work are provided in Latin, German, philosophy, English literature and language, mathematics, European and American history. The entire upper floor of the library, outside of the stacks, is given up to the departmental libraries of economics, sociology, American and European history. The seminar work in science is done in the buildings devoted to the work of the separate departments.

FELLOWSHIPS.

For the encouragement of advanced study and research, eleven teaching fellowships have been established for graduates of special merit. Each fellowship entitles the holder to \$265. Holders of such fellowships are obliged to teach not more than seven hours a week in the respective departments in which they

are chosen. The remainder of the time shall be devoted to investigation and research leading to an advanced degree.

These fellowships are awarded to graduates of the University of Kansas, and of other colleges and universities of good standing, who have distinguished themselves for special scholarship and marked ability. Applications for fellowships must be filed, on blanks provided for the same, with the Chancellor of the University, on or before the 15th of May of the collegiate year preceding that during which the fellowship is held. Such application may be accompanied by recommendations from instructors, and original work of the applicant, either published or in manuscript.

The relative merits of applicants shall be considered by a committee composed of the members of the administrative committee of the Graduate School and the heads of the departments in which the fellowships are granted. The committee, after a full consideration of the merits of all applicants, shall nominate the candidates and recommend the same to the Regents for election.

The Board of Regents will determine each year the departments in which fellowships shall be granted. All fellowships will be filled each year. Fellows may be reelected, in special cases, for one additional year only.

For the year 1908-'09 fellowships will be awarded in the following subjects: German, mathematics, education, sociology, Romance languages, English language, chemistry, American history, European history, zoölogy, and philosophy.

DEPARTMENTS.

The following departments offer graduate work in the University. In some of them the facilities are adequate for thorough training for the doctor's degree. In all of them the facilities are excellent for work leading to the master's degree. See index for headings (enumerated below) on other pages of this catalogue.

Department.	Courses.
Anatomy	4
Botany	14
Chemistry	25
Education	6
Education, Physical	6
Economics	17
English Language	16

Department.	Courses.
English Literature	22
Engineering, Civil	5
Engineering, Mechanical	16
Entomology	11
Evolution, Organic	2
Geology	4
Germanic Languages and Literatures.....	16
Greek	13
History, American	11
History, European	18
Latin Language and Literature.....	16
Law	10
Mathematics	18
Mineralogy	6
Pharmacy	2
Philosophy and Psychology.....	17
Physics	9
Physiology	2
Romance Languages and Literatures.....	22
Sociology	14
Zoölogy	14

COURSES FOR GRADUATE INSTRUCTION will be found in detail under courses of instruction for the College of Liberal Arts and Sciences and the School of Engineering.

II. THE COLLEGE OF LIBERAL ARTS AND SCIENCES.

FACULTY.

- FRANK STRONG, Ph. D., President.
OLIN TEMPLIN, A. M., Dean. Professor of Philosophy.
GEORGE O. FOSTER, A. B., Secretary.
FRANCIS H. SNOW, Ph. D., Professor of Organic Evolution and Systematic Entomology.
EPHRAIM MILLER, Ph. D., Professor of Mathematics and Astronomy.
WILLIAM H. CARRUTH, Ph. D., Professor of Germanic Languages and Literatures.
FRANK O. MARVIN, A. M., Professor of Civil Engineering.
EDGAR H. S. BAILEY, Ph. D., Professor of Chemistry and Metallurgy.
ALEXANDER M. WILCOX, Ph. D., Professor of Greek Language and Literature.
LUCIUS E. SAYRE, Ph. D., Professor of Pharmacy.
LEWIS L. DYCHE, M. S., Professor of Systematic Zoölogy.
FRANK W. BLACKMAR, Ph. D., Professor of Sociology and Economics.
CHARLES G. DUNLAP, Litt. D., Professor of English Literature.
EDWIN M. HOPKINS, Ph. D., Professor of Rhetoric and English Language.
FRANK H. HODDER, Ph. M., Professor of American History and Political Science.
ERASMUS HAWORTH, Ph. D., Professor of Geology and Mineralogy.
ARTHUR T. WALKER, Ph. D., Professor of Latin Language and Literature.
WILLIAM C. STEVENS, M. S., Professor of Botany.
ARVIN S. OLIN, A. M., Professor of Education.
WILLIAM A. GRIFFITH, Professor of Drawing.
EUGENIE GALLOO, A. M., Professor of Romance Languages and Literatures.

- WILBUR C. ABBOTT, B. Litt., Professor of European History.
CHARLES S. SKILTON, A. B., Professor of Musical Theory, History of the Fine Arts, and Organ.
JOHN E. BOODIN, Ph. D., Professor of Philosophy.
IDA H. HYDE, Ph. D., Professor of Physiology.
WILLIAM H. JOHNSON, A. M., Professor of Education.
HENRY B. NEWSON, Ph. D., Professor of Education.
JAMES NAISMITH, M. D., Professor of Physical Education.
MARSHALL A. BARBER, A. M., Professor of Bacteriology and Pathology.
SAMUEL J. HUNTER, A. M., Professor of Entomolgy.
CLARENCE E. MCCLUNG, Ph. D., Professor of Zoölogy.
PERLEY F. WALKER, M. E., Professor of Mechanical Engineering.
MERVIN T. SUDLER, Ph. D., Professor of Anatomy.
ROBERT K. DUNCAN, A. B., Professor of Industrial Chemistry.
MILES W. STERLING, A. M., Associate Professor of Greek.
RAPHAEL D. O'LEARY, A. B., Associate Professor of English.
HANNAH OLIVER, A. M., Associate Professor of Latin.
ELMER F. ENGEL, A. M., Associate Professor of German.
CHARLES M. HARGER, Lecturer in Journalism.
SELDEN L. WHITCOMB, A. M., Associate Professor of English Literature.
HAMILTON P. CADY, Ph. D., Associate Professor of Chemistry.
EDGAR G. FRAZIER, Ph. B., Associate Professor of Public Speaking.
MARTIN E. RICE, M. S., Associate Professor of Physics and Electrical Engineering.
RALPH W. CONE, A. M., Associate Professor of Sociology and Economics.
WILLIAM C. HOAD, B. S., Associate Professor of Civil Engineering.
JOHN N. VAN DER VRIES, Ph. D., Associate Professor of Mathematics.
RALPH E. BASSETT, A. M., Associate Professor of Romance Languages.
RAYMOND A. SCHWEGLER, A. M., Associate Professor of Education.
CARL L. BECKER, Ph. D., Associate Professor of European History.
ARCHIBALD HOGG, A. B., Assistant Professor of Philosophy.
ALBERTA L. CORBIN, Ph. D., Assistant Professor of German.
FREDERIC N. RAYMOND, A. M., Assistant Professor of English.
MARGARET LYNN, A. M., Assistant Professor of English.
FRANK E. BRYANT, A. M., Assistant Professor of English.

- DAVID F. MCFARLAND, M. S., Assistant Professor of Chemistry.
- ARTHUR J. BOYNTON, A. M., Assistant Professor of Sociology and Economics.
- CHARLES H. ASHTON, A. M., Assistant Professor of Mathematics.
- MARY C. FISH, Assistant Professor of Physical Education.
- LOUIS E. SISSON, A. B., Assistant Professor of Rhetoric.
- WILLIAM J. BAUMGARTNER, A. M., Assistant Professor of Zoölogy and Histology.
- HENRY O. KRUSE, A. M., Assistant Professor of German.
- ELISE NEUEN SCHWANDER, A. B., Assistant Professor of Romance Languages.
- CHARLES H. GRAY, Ph. D., Assistant Professor of English Language.
- WALLACE NOTESTEIN, A. M., Assistant Professor of European History.
- FRANCIS W. BUSHONG, S. D., Assistant Professor of Chemistry.
- LEON N. FLINT, A. B., Lecturer in Journalism.
- FRANK G. BATES, Ph. D., Assistant Professor of American History.
- CLARENCE C. CRAWFORD, Ph. D., Assistant Professor of European History.
- ALFRED D. SCHOCH, Ph. D., Assistant Professor of Romance Languages.
- EARL W. MURRAY, A. B., Assistant Professor of Latin.
- HENRY L. JACKSON, B. S., Assistant Professor of Chemistry.
- CLARA HOLST, Ph. D., Assistant Professor of German.
- DANIEL L. THOMAS, Ph. D., Assistant Professor of English Language.
- JAMES E. TODD, A. M., Assistant Professor of Geology and Mineralogy.
- ELIOT BOARDMAN, A. B., Assistant Professor of Romance Languages.
- ROBERT D. LANDRUM, B. S., Assistant Professor of Chemistry.
- PRESSLEY A. GLENN, A. M., Assistant Professor of Entomology.
- LULU GARDNER, A. B., Assistant Professor of English Literature.
- JAMES A. CAMPBELL, A. M., Instructor in German.
- NADINE NOWLIN, A. M., Instructor in Zoölogy.
- ULYSSES G. MITCHELL, A. B., Instructor in Mathematics.
- ARTHUR D. PITCHER, A. B., Instructor in Mathematics.
- EDWARD M. BRIGGS, A. B., Instructor in German.
- FRANK RUPERT, A. B., Instructor in Chemistry.
- JOHN P. HAGERMAN, Instructor in Physical Education.
- JOHN B. CARTER, Instructor in Physiology.

SAMUEL MOORE, A. B., Instructor in English.
 LARRY M. PEACE, A. B., Preparator in Botanical Laboratory.
 WILLIAM A. STARIN, A. B., Assistant Instructor in Botany.
 LALIA V. WALLING, A. M., Laboratory Assistant in Physiology.
 WILLIAM R. B. ROBERTSON, A. B., Assistant Instructor in Zoölogy.
 FLORENCE HEDGER, A. B., Assistant Instructor in Chemistry.
 THOMAS HASLAM, Assistant Instructor in Chemistry.
 GRACE A. HAYWARD, A. B., Assistant Instructor in English.
 WENDELL W. MCCANLES, A. B., Assistant Instructor in Public Speaking.
 LESLIE A. KENOYER, Laboratory Assistant in Botany.

COURSES OFFERED.

The College offers the courses in literature, science and the arts that provide the so-called liberal education, and leaves in the main the applied science and arts to other departments. It is administered so that the required work for entrance and during Freshman and Sophomore years shall result in the student's having had a minimum number of courses in the fundamental branches of knowledge on which he will base his broader and more specialized work of the Junior and Senior years.

DEGREE CONFERRED.

All graduates of the College receive degree of bachelor of arts.

ADMISSION.

There are two methods of admission to the College: First, by examination; second, by certificate.

1.—BY EXAMINATION.

TIMES AND PLACE. Candidates for admission to first-year work in the College of the University, not presenting the required certificates, will be examined at the University, Lawrence, either on Thursday, Friday and Saturday, May 29, 30 and 31, 1908, or on Wednesday, Thursday and Friday, September 16, 17 and 18, 1908. The following is the schedule of examinations:

Thursday, May 28, or Wednesday, September 16

9-10. English.	1-2. Physical geography.
10-11. Algebra.	2-3. German.
11-12. French.	3-4. Economics.

Friday, May 29, or Thursday, September 17.

- 9-10. Geometry.
- 10-11. Latin.
- 11-12. History.
- 2-3. Greek.
- 3-4. Physics.

Saturday, May 30, or Friday, September 18.

- 8-9. Botany.
- 9-10. Chemistry.
- 1-2. Zoölogy.
- 2-4. Free-hand drawing.

Candidates for admission may divide the examination between two years, or between the two examinations of the same year, under the following conditions: The applicant may present himself at the preliminary for examination in any or all of the prescribed subjects, and, if he is successful in five or more subjects, he need not be again examined in them.

Examinations for advanced standing on work done in preparatory schools, not required for admission, will be held at the same time as entrance examinations above.

2.—BY CERTIFICATE.

Nearly all students enter the College by certificate from high schools, academies, military schools, or preparatory schools of other colleges and universities, accredited by the University.

The candidate for admission by certificate must present either a certificate of graduation from an accredited preparatory school, or a letter from the principal of such school recommending him for admission without graduation. The certificate should be signed by the principal or other executive officer of the school. Blank certificates will be sent by the Registrar of the University about May 1 of each year to the principal of each accredited school. The certificates of all expecting to enter the College of the University should be filled out, signed and returned by the principal or superintendent of schools to the Registrar before June 1.

Blank certificates will be sent on application to the Registrar.

ENTRANCE UNIT.

Preparatory work is estimated in terms of the "entrance unit." A subject like algebra, for example, running one year, *i. e.*, thirty-five weeks, five recitations per week, with at least

forty minutes for each recitation, constitutes one "entrance unit." In computing entrance units, the laboratory period should be twice the length of a recitation period.

NUMBER OF UNITS REQUIRED.

Fifteen units are necessary for unconditional admission to the College. A temporary deficiency, however, of not more than three units will be permitted, but the deficiency in any "group" given below must not exceed one unit.

MAKING UP DEFICIENCIES.

A student thus conditioned must make good all of his deficiencies during his first year in the University. Deficiencies thus made good do not count as College work.

In Making up deficiencies at the University, a "College unit," *i. e.*, five hours a week for a half-year (one term), is considered equivalent to an "entrance" (or high-school) "unit," as above defined.

COLLEGE CREDIT.

College credit for work done in preparatory schools will be given upon examination only. (See page 80 for times and place of examination.)

SUBJECTS FOR ADMISSION.

The subjects from which entrance work may be offered, together with the number of units, are arranged in six groups, as follows; a total of fifteen units must be offered:

GROUP I, English.	English, four units.	Three units are required.
GROUP II, Mathematics.	Elementary algebra, one and one-half units. Plane geometry, one unit. Solid geometry, one-half unit. Plane trigonometry, one-half unit. Advanced algebra, one-half unit.	The elementary algebra and plane geometry are required.
GROUP III, Foreign Languages.	Latin, four units. Greek, three units. German, three units. French, three units.	Of these, three units are required, which must be, first, in Latin, or, second, in German.*

GROUP IV, Physical Sciences.	Physical geography, one unit. Physics, one unit. Chemistry, one unit.	One unit is required.
GROUP V, Biological Sciences.	Botany, one unit. Zoölogy, one unit. Physiology, one unit.	One unit is required.
GROUP VI, History.	Greek and Roman, one unit. Mediaeval and modern, one unit. English, one unit. American, one unit. Economics, one unit.	One unit is required.

* The College does not encourage the substitution of German for Latin for entrance to the Freshman year.

As observed above, to secure unconditional admission to the Freshman class of the College the candidate must offer fifteen units from the foregoing list of accredited preparatory subjects. Of these fifteen units, eleven and one-half are prescribed by group; the remaining three and one-half units may be chosen without restriction.

In view of the difficulty some preparatory schools may have in expanding their courses of study so as to include all the required units, until further notice candidates will be admitted unconditionally who offer fifteen units from the foregoing list, with only eight and one-half units specifically required. These required subjects are, three units of English, three units of either Latin or German (not a combination of the two); two and one-half units of mathematics; the remaining six and one-half units may be selected from the six groups without restriction.

Students entering with fifteen units who take advantage of this privilege of postponing prescribed entrance requirements must make good such deferred requirements during their first year in the College. A course so taken during the Freshman year counts as regular College work.

It is hoped that within a reasonable time all Kansas high schools will be able so to arrange their courses of study as to meet all the entrance requirements of the University.

ENTRANCE SUBJECTS IN DETAIL.

ENGLISH.

Four units (three required).

The requirement in English is that agreed upon by a joint committee of colleges and secondary schools and now uniformly accepted by all colleges in the United States. Of this requirement, the following is a general definition:

"I. READING. A certain number of books will be set for reading (see list subjoined). The candidate will be required to present evidence of a general knowledge of the subject-matter and to answer simple questions on the lives of the authors. The form of examination will usually be the writing of a paragraph or two on each of several topics to be chosen by the candidate from a considerable number—perhaps ten or fifteen—set before him in the examination paper. The treatment of these topics is designed to test the candidate's power of clear and accurate expression, and will call for only a general knowledge of the substance of the books. In place of a part or the whole of this test, the candidate may present an exercise book, properly certified by his instructor, containing compositions or other written work done in connection with the reading of the book. In preparation for this part of the requirement, it is important that the candidate shall have been instructed in the fundamental principles of rhetoric.

"II. STUDY AND PRACTICE. This part of the examination presupposes the thorough study of each of the works named in this division. The examination will be upon the subject-matter, form, and structure. In addition, the candidate may be required to answer questions involving the essentials of English grammar and on the leading facts in English literary history to which the prescribed texts belong.

"*Note.*—No candidate will be accepted in English whose work is notably defective in point of spelling, punctuation, idiom, or division into paragraphs."

The books recommended for use in each of the preceding divisions are as follows, for 1908:

I. FOR READING. Shakspeare's *The Merchant of Venice* and *Macbeth*; Sir Roger de Coverley Papers in the *Spectator*; Irving's *Life of Goldsmith*; Coleridge's *The Ancient Mariner*; Scott's *Ivanhoe* and *Lady of the Lake*; Tennyson's *Gareth and*

Lynette, Lancelot and Elaine, and The Passing of Arthur; Lowell's *The Vision of Sir Launfal*; George Eliot's *Silas Marner*.

II. FOR STUDY AND PRACTICE. Shakspeare's *Julius Cæsar*; Milton's *Lycidas*, *Comus*, *L'Allegro*, and *Il Penseroso*; Burke's *Speech on Conciliation with America*; Macaulay's *Essay on Addison and Life of Johnson*.

For 1909, 1910 and 1911 the recommendations are as follows:

FOR READING.

GROUP I (two books to be selected): Shakspeare's *As You Like It*; Shakspeare's *Julius Cæsar*; Shakspeare's *The Merchant of Venice*; Shakspeare's *Twelfth Night*; Shakspeare's *Henry V*.

GROUP II (one book to be selected): Bunyan's *The Pilgrim's Progress*, part I; Bacon's *Essays*; The *Sir Roger de Coverley Papers* (in the "*Spectator*"); Franklin's *Autobiography*.

GROUP III (one book to be selected): Chaucer's *Prologue*; selections from Spenser's *Faerie Queene*; Pope's *The Rape of the Lock*; Goldsmith's *The Deserted Village*; Palgrave's *Golden Treasury* (first series), books II and III, with especial attention to Dryden, Collins, Gray, Cowper, and Burns.

GROUP IV (two books to be selected): Hawthorne's *The House of the Seven Gables*; Thackeray's *Henry Esmond*; George Eliot's *Silas Marner*; Dickens's *A Tale of Two Cities*; Scott's *Ivanhoe*; Scott's *Quentin Durward*; Goldsmith's *The Vicar of Wakefield*; Mrs. Gaskell's *Cranford*; Blackmore's *Lorna Doone*.

GROUP V (two books to be selected): Emerson's *Essays* (selected); Ruskin's *Sesame and Lilies*; Irving's *Sketch Book*; Carlyle's *Heroes and Hero-worship*; De Quincey's *Joan of Arc* and *The English Mail Coach*; Lamb's *Essays of Elia*.

GROUP VI (two books to be selected): Palgrave's *Golden Treasury* (first series), book IV, with special attention to Wordsworth, Keats, and Shelley; Coleridge's *The Ancient Mariner*; Lowell's *The Vision of Sir Launfal*; Scott's *The Lady of the Lake*; Poe's *Poems*; Tennyson's *Gareth and Lynette*, *Lancelot and Elaine*, and *The Passing of Arthur*; Arnold's *Sohrab and Rustum*; Byron's *Mazeppa* and *The Prisoner of Chillon*; Longfellow's *Courtship of Miles Standish*; Browning's *Cavalier Tunes*, *The Lost Leader*, *How they Brought the Good News from Ghent to Aix*, *Evelyn Hope*, *Home Thoughts from Abroad*, *Home Thoughts from the Sea*, *Incident of the French Camp*, *The Boy and the Angel*, *One Word More*, *Herve Riel*, *Pheidippides*; Macaulay's *Lays of Ancient Rome*.

FOR STUDY AND PRACTICE.

Shakspeare's *Macbeth*; Milton's *Lycidas*, *Comus*, *L'Allegro*, and *Il Penseroso*; Burke's *Speech on Conciliation with America* or Washington's *Farewell Address* and Webster's *First Bunker Hill Oration*; Macaulay's *Life of Johnson* or Carlyle's *Essay on Burns*.

The work indicated in the preceding statements is intended to occupy three years of a high-school course, five recitations weekly; and it is intended that teachers shall be left free to secure the indicated results in whatever way may prove most suitable, and, in particular, to substitute for the books named others of equivalent literary value and of similar types, or to add others to the list. Hence, it is impracticable to describe or to define precisely what should be done in any one year or in any one term; but a few suggestions may be made, to be followed at discretion.

It is preferable to carry on the subjects side by side, in the proportion of two recitations a week devoted to composition, grammar, and rhetoric, to three devoted to literature; the study of composition to include the writing of one or two exercises every week, and the discussion of these exercises to be made the means of reviewing the principles of grammar as well as those of rhetoric; text-books to be used chiefly for reference, if at all.

GRAMMAR. If students do not enter the high school with such a practical knowledge of grammar as will enable them, on occasion, to name and classify parts of speech, explain the structure of sentences, and state and apply principles, the subject should be further studied in connection with the work in composition, and, if necessary, there may be a brief formal review at some stage of the high-school course.

COMPOSITION AND RHETORIC. The text-book in rhetoric is to be regarded merely as an aid in the study of composition and of literature. Exercises in composition should be oral as well as written, and should be continuous through the high-school course. Subjects should be derived partly from the literature read by the class and partly from the student's own observation and experience. The order of advance may be: First, stories; the finding and shaping of descriptive and narrative material in easy, spontaneous expression. Second, essays; study of theme, plan, and paragraph. Third, the general principles of style; the

sentence and the word. Fourth, the general principles of form—narrative and descriptive, expository and argumentative.

LITERATURE. Text-books in history, biography and criticism are merely incidental aids in the study of classics, and, like those in rhetoric, should rarely, if ever, be made subjects of formal recitation, except in reviewing. It is desirable that, of the books read in the high-school course in literature, those of modern authors shall be taken up first, and that the order of types shall be such as will coördinate the study with that of composition. American literature, if included, should precede English, and the prose of any period should precede its verse. Reading done at home should be preceded and followed by class discussions and reports. At the end of the course there should be a chronological review, with a good text-book, of all the work that has been done, with a brief survey of earlier periods.

The books named in the preceding standard lists for 1909, 1910 and 1911 may be tentatively arranged by years in the order following, and the study of composition coördinated as shown. The earlier reading will be more rapid, the latter more critical. For many of the classics named, alternatives may be substituted at pleasure from the prescribed list:

FIRST YEAR.

Literature—in Class.—Three periods weekly. House of Seven Gables, in part; Vision of Sir Launfal; Essay on Burns; other books as selected.

Out of Class.—House of Seven Gables, completed; Silas Marner; The Ancient Mariner; Deserted Village; Essays of Irving or Emerson, and Lamb; reference-reading of biography, history, etc.

Composition and Rhetoric.—Two periods weekly. The finding, shaping and adapting of material, in written and oral exercises; stories, letters, essays, study of theme, plan, and paragraph.

SECOND YEAR.

Literature—in Class.—Three periods. Speech on Conciliation; Minor Poems of Milton; other books as selected.

Out of Class.—Reference reading; Pilgrim's Progress, part I.

Composition and Rhetoric.—Two periods. The principles of style, in written and oral exercises; stories, letters, essays, study of sentence structure and of choice and use of words, study of paragraphs, translation, synonyms, figures, verse forms, etc.

THIRD YEAR.

Literature—in Class.—Three periods. Macbeth; other books as selected; general historical review.

Out of Class.—Two selected plays of Shakspeare; reference reading.

Composition and Rhetoric.—Two periods. The forms of discourse; stories, letters, essays, study of nature and principles of narration and description, exposition and argument.

FOURTH YEAR.

Accredited high schools may offer a fourth year of English, if approved by the High-school Visitor; and the character of this unit or fourth year's work may be arranged with reference to the conditions of individual schools. A choice is offered of any one of the following three courses:

1. The time may be given chiefly to the study of English literature of the seventeenth century and earlier, beginning with a thorough historical survey of the field, and including the reading of Old English verse in translation, of selections from Chaucer and Spenser, and of seventeenth century classics, prose and verse, not included in the course of the first three years. With this study there should be regular essay writing, not less often than once a month.*

2. The time may be given chiefly to the study of the principal forms of discourse, narrative and descriptive, expository and argumentative, with daily practice in adapting these to all purposes and occasions for which speaking or writing is demanded, with especial reference to purpose and occasion, and to the character of the person or public to be addressed. With this there should be a considerable amount of collateral study of literary selections illustrating the several types as they are taken up for practice.

3. The time may be given chiefly to the study of English language; beginning with elementary Old English grammar, prose composition, and readings from the simplest prose and verse. Then may follow the history of the English language and grammar after the Old English period, with attention to orthography, pronunciation, word composition and word derivation, inflections and syntax; and the course may be completed with the study of Middle English grammar, pronunciation, and

* For a full outline of such a course as this, and for further details and references for each of these courses, see the High-school Manual, No. IV.

selections from Chaucer. With this study there should be regular themes or essays, from once a week to once a month.

The third of these options is recommended wherever it is practicable to give it, and excellent text-books for it are available: Smith's Old English Grammar for the Old English part; Emerson's History of the English Language, or Champney's, for the historical part, and, for study of Middle English, Sweet's First and Second English Middle Primers or the school editions of Chaucer's Prologue and the *Knights Tale*.

Entrance certificates must show in complete detail the nature of this fourth unit, if offered.

MATHEMATICS.

Four units (two and one-half required).

It is assumed that all candidates for admission to the University are proficient in the practical application of arithmetic. The University recommends that the arithmetic in the upper grades be made more algebraic in character or that some elementary algebra be taught in the grades in place of some of the more abstract topics in arithmetic. It also recommends that concrete geometry, under its own name or under the name of geometrical drawing, be taught in the grades.

The student must offer a minimum of two and one-half units, and may offer a maximum of four units in mathematics, in five subjects, as follows:

ELEMENTARY ALGEBRA. One and one-half units. The required one and one-half units of algebra shall consist of the four fundamental operations of algebra; factoring; determination of highest common factor and lowest common multiple by factoring; fractions; simple equations, both numerical and literal; simultaneous equations, both numerical and literal, containing two and three unknown quantities; radicals, including the extraction of the square root of polynomials and of numbers; exponents, including fractional and negative; quadratic equations, in one and two unknown quantities, both numerical and literal; ratio and proportion; binomial theorem for positive integral exponents; formulas for the n th term and the sum of the terms of arithmetic and geometric progressions, with applications.

Throughout the course the pupil should be required to solve numerous problems which involve putting questions into equations. Some of these problems should be chosen from mensuration, from physics, and from commercial life. The use of graphical methods and illustrations, particularly in connection

with the solution of equations, is also required. The same credit will be given for the work if done partly in the grades and partly in the high school or if done wholly in the high school.

PLANE GEOMETRY. One unit. The usual theorems and constructions of good text-books, including the general properties of plane rectilinear figures; the circle and the measurement of angles; similar polygons; areas; regular polygons and the measurement of the circle. The solution of numerous original exercises, including loci problems, and the application to the mensuration of lines and plane surfaces is strongly insisted on. The first five books of Wentworth's Geometry (or an equivalent) will be accepted. This unit is required.

SOLID GEOMETRY. One-half unit. The usual theorems and constructions of good text-books, including the relations of planes and lines in space; the properties and measurements of prisms, pyramids, cylinders, and cones; the sphere and the spherical triangle; numerous original exercises, including loci problems and applications to the mensuration of surfaces and solids.

PLANE TRIGONOMETRY. One-half unit. Definitions and relations of the six trigonometric functions as ratios; circular measurement of angles; proofs of principal formulas, in particular for the sine, cosine and tangent of the sum and difference of two angles, of the double angle and the half angle, the product expressions for the sum or the difference of two sines or of two cosines, etc.; the transformation of trigonometric expressions by means of these formulas; solution of trigonometric equations of a simple character; theory and use of logarithms (without the introduction of work involving infinite series); solution of right and oblique triangles and practical applications. Problems should be solved by the use of tables of natural functions and also by use of tables of logarithms and logarithmic functions.

ADVANCED ALGEBRA. One-half unit. Permutations and combinations, limited to simple cases; complex numbers, with graphic representation of sums and differences; determinants, chiefly of the second, third and fourth orders, including the use of minors and the solution of linear equations; numerical equations of higher degree, and so much of the theory of equations, with graphic methods, as is necessary for their treatment, including Descartes' rule of signs and Horner's method, but not Sturm's functions or multiple roots.

Most candidates prefer to offer three units of mathematics for entrance; these three units should consist of the two and one-

half units of required algebra and plane geometry and one-half unit of solid geometry or plane trigonometry.

As to the order in which the mathematical topics should be taught in the high schools, the following is to be recommended:

First Year. Elementary algebra, including a brief treatment of quadratic equations.

Second Year. Plane geometry completed.

Third Year. Solid geometry, first half-year; required algebra completed, second half-year.

Fourth Year. Plane trigonometry, first half-year; advanced algebra, second half-year.

It is important that students entering the University should come with the algebra fresh in mind. Schools that do not offer the fourth year in mathematics should teach the last third of the required algebra as late as possible in the course.

LATIN.

Three or four units.

First Unit. Beginner's Book. In all written exercises the long vowels should be marked, and in all oral exercises pains should be taken to make the pronunciation conform to the quantities. Students should be taught from the beginning to read the Latin aloud with intelligent expression.

The important things in this year are: First, a perfect knowledge of the paradigms; second, some practice in reading easy connected passages in preparation for the second year's work.

Second Unit. The first four books of Cæsar's Gallic War, or selections from Cæsar equivalent in amount to those books; and the equivalent of one period a week in prose composition. Selections from other prose writers, such as Nepos, may be taken as a substitute for one book of Cæsar, or an equivalent amount may be read in any of the "second-year books," provided at least two books of Cæsar are included.

The important things in this year are: First, a systematic drill on the more common case and mode uses; second, an intelligent comprehension of the matter read. The students should be able to give a good account of any of Cæsar's campaigns.

Third Unit. Six orations of Cicero, and the equivalent of one period a week in prose composition. The orations should include the four against Catiline and the Manilian Law. Sallust's Catiline may be substituted for the Manilian Law and a sixth oration.

The important things in this year are: First, a systematic drill in all Ciceronian case and mode uses; second, an intelligent comprehension of the contents of the orations.

Fourth Unit. The first six books of Vergil's *Æneid*, and the equivalent of one period a week in prose composition. An equivalent amount of Ovid may be substituted for part of the Vergil.

The important things in this year are: First, an intelligent appreciation of Vergil's story and art; second, a training in reading the meter which will allow the student to read the Latin metrically with ease and expression; third, a study of the mythology. If the work of the first three years has been done well, syntactical drill should be confined almost wholly to the period devoted to prose composition.

Note.—When only three units are presented, it is preferred that they be the first, second, and third; but the first, second, and fourth will be accepted. No combination of Cicero and Vergil will be accepted as a unit.

Latin Prose Composition. It will be noticed that prose composition is required throughout the last three years. One period a week may be devoted to it, or a smaller amount may be given each day. Such books as Bennett's and Jones's are recommended as giving the more systematic drill, but they should be supplemented by the occasional dictation of connected passages based on the text read. Such books as Daniell's and Moulton's will be accepted, but they need to be supplemented by a systematic study of the grammar. D'Ooge's *Latin Composition* is also good. If the book chosen does not give sufficient material for work in connection with Vergil, Nutting's *Supplementary Latin Composition* is recommended.

GREEK.

One, two or three units.

First Unit. Elementary Greek. White's *First Greek Book* or Gleason and Atherton's *First Greek Book*, or an equivalent. Thorough mastery of declensions and conjugations, and the main ideas of syntax. Xenophon's *Anabasis* begun, and twenty to thirty pages read. Goodwin's, Babbitt's or Goodell's *Greek Grammar*.

Second Unit. Xenophon's *Anabasis* continued into or through the fourth book, or an equivalent amount of other Attic prose. Review of inflections. Systematic study of syntax in the gram-

mar. Practice in writing Greek based on the text read. Constant training in sight-reading.

Third Unit. Homer's Iliad or Odyssey, five to six books, exclusive of the Catalogue of Ships. Constant practice in reading at sight. Special attention to Homeric forms, vocabulary, and scansion. Attic^e prose composition once a week. Seymour's School Iliad. Perrin and Seymour's School Odyssey.

GERMAN.

One, two or three units.

First Unit. The elements of grammar (the first eighteen lessons of Carruth's Otis's Essentials of German Grammar), including: (1) Careful drill in pronunciation; (2) familiarity with German script and text; (3) the memorizing of paradigms; (4) the writing, correction, memorizing and reciting after correction of all the English-German exercises in one of these grammars; (5) colloquial exercises daily to illustrate and fix the principles and the vocabulary introduced; (6) the memorizing of 100 lines of good German (popular songs or narrative prose). One-half year.

The reading and translation of about seventy-five pages of simple German (as in Carruth, Hewett, Joynes-Meissner Readers). This reading should involve the reading aloud of the German, the rendering into good idiomatic English, and question and answer in German upon what is read. Word-for-word translation should not be permitted, save when necessary to show the precise force of an idiom. One-half year.

The above work will require, if properly done, five forty-five minute periods weekly for thirty-five weeks. A wise plan is to begin with the grammar and carry this continuously for five or six weeks. Then introduce the reader; at first, one lesson a week, and then, after ten or twelve weeks, increasing the number of lessons from the reader until the grammar lessons have been completed and thoroughly reviewed.

Second Unit. Additional study of grammar, directed to the details of case government, use of the modal auxiliaries, of the subjunctive, and of word order. (The equivalent of lessons XIX to XXIV in Carruth's Otis's Essentials.) Practice in writing German from dictation, at least eighteen exercises (one a week for a half-year, to occupy fifteen to twenty minutes each).

Reading and translation of 100 pages of connected prose and of Schiller's Wilhelm Tell, complete. The 100 pages of prose

may be made up from the remainder of Carruth's or Hewett's Reader, together with Zschokke's *Der zerbrochene Krug*, Heyse's *Die Blinden* or *Anfang und Ende*, Storm's *Immensee*, Andersen's *Maerchen*, Grimm's *Maerchen*.

Third Unit. Review of grammar, and the completion of Carruth's Otis, lessons XXV to XXX, with drill on the less usual strong verbs and on the idioms of tense and order. Composition work, consisting chiefly of paraphrases of the German used for translation.

Reading of 400 pages of standard German, with careful translation and critical understanding. (Some portion of what is translated should always be read aloud in German.) Suitable works are: Freytag's *Die Journalisten* and Lessing's *Minna von Barnhelm*; Fouque's *Undine*; Hauff's *Das kalte Herz*; Schiller's *Der dreissigjährige Krieg*; Freytag's *Doktor Luther*; Riehl's *Burg Neideck*; Goethe's *Hermann und Dorothea*.

FRENCH.

One, two or three units.

First Unit. Rudiments of grammar; conjugation of the regular and the more usual irregular verbs; moods and tenses; use and position of pronouns; partitive constructions. Careful drill in pronunciation. Reading of 100 pages of easy prose. Practice in writing and speaking very simple sentences.

Second Unit. All the essentials of accidence and syntax. Composition. Frequent dictation. Oral exercises. Reading of 300 to 350 pages of modern French.

Third Unit. Thorough review of grammar. Written exercises based upon grammatical points, and connected writing. Dictation. Practice in hearing and speaking French. Reading of 600 pages of fairly difficult modern French.

PHYSICAL GEOGRAPHY.

One unit.

The course in physical geography should include a study of the following subjects:

1. The earth as a globe; shape of the earth, how proved; size, how measured; motions, how determined; map making; different modes of projection.

2. The ocean; forms and divisions; depth, density, temperature; ocean movements, waves and currents; character of ocean floor; life in ocean; tides, character and causes; shore-lines.

3. The atmosphere; chemical composition, and how determined; pressure of, and how determined; circulation of, character and cause; storms, classification of, and cause.

4. Land, amount and distribution of; topographic charts; plains, kinds of, and development of; plateaus, kinds of, and development of; volcanoes, distribution and character of; rivers, life-history of; glaciers, kinds and characteristics of.

PHYSICS.

One unit.

The candidate's preparation in physics should include:

1. Recitations on at least one standard text, such as Carhart's High School Physics or Hoadley's A Brief Course in Physics.

2. Experimental work, consisting of lecture-table demonstrations and individual laboratory work. The latter should comprise at least thirty exercises selected from such lists as are given in the University High-school Manual or in a good laboratory manual, such as that by Chester-Dean-Timmermann or that by Coleman.

CHEMISTRY.

One unit.

Preparatory work in this subject should cover practically the work done in course I in the University. The student should have a good knowledge of (1) modern chemical theories; (2) the most important facts of chemical science; (3) the practical applications of chemistry to every-day life and to the useful arts. It is important that elementary physics be thoroughly understood before taking up the study of chemistry. About two-fifths of the time devoted to chemistry should be spent in actual laboratory work by the students individually, and it is not sufficient if the instructor performs the experiments in the presence of the class. Any good text-book, such as Remsen's Introduction to the Study of Chemistry (sixth edition), Newth's Inorganic Chemistry, or Introduction to General Chemistry, by H. C. Jones, may be used. Some of the abridged text-books are too elementary to fulfil the requirements of the University.

BOTANY.

One unit.

A unit's course in botany should essentially follow the outline recommended in the Proceedings of the Seventh Annual Meeting of the North Central Association of Colleges and Secondary

Schools. Detailed directions for such a course are given in Ganong's *The Teaching Botanist*, Stevens's *Introduction to Botany*, and Bergen's *Foundations of Botany*. Not less than two-thirds of the time should be devoted to laboratory work, and the remainder to recitations and discussions. Field excursions should be made, so that the students may know in their natural surroundings the plants already studied in the laboratory. Careful drawings and notes should be required in connection with the laboratory work.

ZOOLOGY.

One unit.

Acceptable work in zoölogy must be of such a character that at least two-thirds of the time is spent in individual study of type specimens. The value of the study rests in the training given in independent observation and correlation of facts, and in the accurate recording of these facts by drawings and notes. Comparative work is of the greatest importance. The arthropods are the best group in Kansas upon which to work, and it is suggested that they be used to exemplify the general principles of structural relations and classification. For a laboratory guide, Marshall and Hurst's *Practical Zoölogy* is recommended, and as a text-book, Parker and Haswell's *Manual of Zoölogy*. Where much of the time is devoted to the study of insects, Hunter's *Elementary Studies in Insect Life* may be used as a guide, and Comstock's *Manual of Entomology* and Weed's *Life-histories of American Insects* as reference books.

PHYSIOLOGY.

One unit.

To encourage the more systematic teaching of this important subject, the University will accept it as an entrance unit, but provided only that the study occupies a full year of high-school time and is taught by laboratory methods and by specially prepared instructors.

In presenting this subject, about one-half of the time should be employed in laboratory work and the remainder of the time in recitations. To insure the best results and to cultivate the power of observation and expression, neat and correct drawings, properly labeled and accompanied by intelligent notes should be made of each subject, demonstration or experiment studied.

Martin's *Briefer Course of the Human Body* or Colton's *Experimental and Descriptive Physiology* are recommended as text-books.

GREEK AND ROMAN HISTORY.

One unit.

If four years of history are offered in the high school, it is recommended that Greek and Roman history, with some preliminary study of the earlier nations, be given in the first year; otherwise, as early as possible. In selecting a text the teacher will do well to examine Morey, West's Ancient World, Wulfson, Myers, and Botsford.

MEDIÆVAL AND MODERN EUROPEAN HISTORY.

One unit.

This should, if possible, succeed the course in ancient history, and precede that in English history. If English history is not offered separately, some special stress may be laid upon it in this course. Many excellent text-books have recently appeared on this subject. Among these are Munroe and Whitcomb, Bourne, West, Myers, and Robinson.

ENGLISH HISTORY.

One unit.

In a four-year course English history should be offered in the third year; otherwise it should, at any rate, precede American history. There are numerous text-books on the subject. Besides that recommended for state use, Channing and Higginson, there are Corman and Kendall, Walker, Cheyney, Wrong, Larned, Montgomery and Andrews.

Note.—In the three courses above attention should be given to geography, some outside reading, and the taking of notes. The use of outline maps to be filled in by the students is especially recommended. In all good text-books will be found lists of references to books desirable for a school library. The Report of the Committee of Seven should also be consulted. But the department does not urge that the division between ancient and mediæval history be fixed at 800 A. D.

AMERICAN HISTORY.

One unit.

This is the course recommended by the Committee of Seven of the American Historical Association in their report on the study of history in schools. In order to receive entrance credit, the course must not be given before the third year in the high school, and must be based upon some such approved text as Channing's Student's History, McLaughlin's American Nation, or Hart's Essentials.

ECONOMICS.

One unit.

The general principles of economic science, with some of its applications. The instructor, as far as possible, should approach the subject from the concrete rather than from the abstract, and should verify every principle by practical examples. Blackmar's Economics (or its equivalent) should be used as a text and guide. Special attention should be given to books II and III. Chapters II and III of book I and chapters I, II and III of book III require special analysis by the instructor.

A limited amount of collateral reading should be required, and easy investigations of local economic conditions should be advised.

ADMISSION TO ADVANCED STANDING.

The regulations governing admission to advanced standing in the College are administered by a committee of the Faculty, which examines into the merits of each case presented to it and either credits the applicant with a certain rank or recommends him to the heads of departments for advanced credit or examination.

Application for such advanced standing must be made at the time of matriculation.

Undergraduates from other colleges must present certificates of honorable dismissal, or other satisfactory evidence of good character.

Some of the requirements of the College are indicated as follows:

I. BY EXAMINATION. A candidate may be admitted to the Sophomore, Junior or Senior class, if he appear on examination to be prepared in the following studies: (1) In the studies required for admission to the Freshman class. (2) In all such studies as he would have pursued if he had entered at the beginning of the course.

All applications for examination for advanced standing must be made during the opening week of the first term. College credit will be given for work done in preparatory schools upon examination only. The times and place of such examinations are the same as listed on pages 80 and 81.

II. WITHOUT COMPLETE EXAMINATION. Graduates or students from the higher classes of other colleges may be admitted

to advanced standing upon presentation of a certificate stating in detail the work done, under such conditions as the Faculty may determine to be just in each case, upon consideration of the applicant's previous course of study and of the evidence he presents of his proficiency in that course.

It is required of all candidates for the bachelor's degree who have entered the University on advanced standing from other colleges that they do not less than thirty hours of Junior or Senior work in residence at the University.

Students leaving the University before obtaining the bachelor's degree, who have spent three full years in residence at the University, and lack but fifteen hours of graduation, may receive not to exceed fifteen hours' credit from an institution of equal standing, provided they receive the bachelor's degree or a higher degree from such institution.

SPECIAL STUDENTS.

Opportunity is given in the College for the admission of persons of mature years who desire to pursue some special line of work, without following any prescribed course or becoming candidates for a degree.

The admission of such special students is directly under the control of a committee of the Faculty, whose certificate of acceptance must be presented to the Registrar before registration. Applicants for classification as special students must present satisfactory evidence of proper preparation for the studies desired, and must also meet such other requirements as may be fixed by the Faculty.

REGISTRATION AND ENROLMENT.

All candidates for admission having certificates from accredited schools and all students of the College intending to pursue their studies during the ensuing year must present themselves for registration at the University on September 16 to 19, inclusive, 1908. Registration at a later date will be permitted only on the presentation of a satisfactory reason for the delay.

Registrations may be made through the mails by sending certified transcripts of preparatory work and a check payable to Edward E. Brown, Secretary, covering fees, to the Registrar of the University after August 1.

The Dean of the College is charged with the execution of all University and Faculty rules relating to the enrolment of students in classes and their choice of studies.

TIME OF APPLICATION FOR ENROLMENT. At least two weeks before the end of each term, all students in residence are required to file with the Dean applications for enrolment in the subjects which they desire to pursue during the following term.

COMPLETION OF REQUIREMENTS. A student may not be enrolled in any subject in advance of any other which he has yet to take, and which it is possible for him to carry at the time.

EXAMINATIONS.

Examinations will be held for all students during the regular recitation hours of the last days of the term (or half-term), each class in its proper recitation hour; they may occupy not more than one hour for each hour per week that the course has occupied. Examinations shall be held for all classes on the last day of the examination period.

Special examinations will be given only during examination weeks and during the opening week of the fall term.

All requests for special examinations must be approved by the Dean.

FAILURES. All failures in examinations must be made good at the earliest possible date, not more than one year from date of the failure. If not made good by the time of the recurrence of the course, the work must be done in class.

Absence from examination or failure in more than one-third of his work, in any one term, severs a student's connection with the University.

CONDITIONS. A student who has failed to pass in any course may be conditioned upon the same by the Dean, if in the opinion of the instructor it can be made good by the next examination period without detriment to the regular work of the student. A condition which is not made up at the next examination period is placed again in the list of failures.

Inadequate Preparation. When students show by their current work insufficient entrance preparation in any study they may be required to make good such deficiency in any manner prescribed by their instructors.

SCHOLARSHIPS.

The following scholarships are offered to students in the College:

1. The Lucinda Smith Buchan Memorial Scholarship. Established by the alumnae members of the Pi Beta Phi sorority. A loan of \$200 for three years without interest. Open to young women of the Junior and Senior classes of the College. Held in 1907-'08 by Miss Gertrude Walters, of Horton, Kan.

2. The Marcella Howland Memorial Scholarship. Sixty dollars a year. Open to young women of the Junior and Senior classes of the College. Held in 1907-'08 by Miss Cora E. Dolbee, of Lawrence, Kan.

3. The Kansas City Branch of the Association of Collegiate Alumnae Scholarship. Two hundred dollars a year. Awarded to young women, who are chosen from graduates of the Kansas City high school. Held in 1907-'08 by Miss Mabel Eggleston, of Kansas City, Mo.

4. A research table in the Marine Biological Laboratory, at Woods Hole, Mass., supported by Mrs. Sara T. D. Robinson, is open to women of the University who have specialized in the sciences and given evidence that they are fitted to make the best use of it. Held in 1907-'08 by Miss Lillian Bunton, of Lawrence, Kan. Application for the use of this table should be sent Mrs. Sara T. D. Robinson, Oakridge, Lawrence, Kan.

MEMORIAL FUND.

May Sexton Agnew Memorial Fund. A fund of \$500 has been given the library of the University by the Kappa chapter of Kappa Alpha Theta fraternity. The income of this fund is to be devoted to the purchase of books in English literature.

TEACHER'S DIPLOMA.

The teacher's diploma of the University may be given to A. B., A. M. and Ph. D. graduates of the University on the following conditions:

1. SPECIAL KNOWLEDGE. The completion of at least twenty hours of college work in the subject, or the closely allied subjects, that the candidate proposes to teach; the ultimate decision as to the candidate's proficiency to rest with the head of the department in which the major work is taken.

2. PROFESSIONAL KNOWLEDGE. The completion of twelve and one-half hours' work in the department of education.

3. AMOUNT OF WORK OFFERED. The candidate for the A. B. degree, who is at the same time a candidate for the teacher's diploma, shall be required to offer five hours of additional undergraduate work.

4. GRADE OF SCHOLARSHIP. The teacher's diploma shall be granted only to graduates whose scholarship in all of their undergraduate class work averages at least grade II.

On presentation of the University teacher's diploma, the State Board of Education will issue a three-years' state teachers' certificate. At the expiration of the three-years' certificate, a life certificate will be issued, if the candidate has taught successfully during two of the three years.

EXPENSES.

By legislative enactment, the following fees must be charged each student of the College of the University, in lieu of all other fees of each school year, payable at the time of matriculation:

Matriculation fee, payable but once.....	\$5 00
Incidental fee, payable annually, at registration.....	10 00

To students residing in states or territories other than Kansas, the fees charged must be as follows:

Matriculation fee payable but once.....	\$10 00
Incidental fee, payable annually, at registration.....	20 00

At graduation, a diploma fee of five dollars is required.

LABORATORY SUPPLIES AND FEES. All the laboratories of the University and their equipment of power, engines, machinery, desks, tables, balances, microscopes, models and complete apparatus are at the disposal of students, under the direction of their instructors. These desks, benches and tables will be further provided with individual sets of tools, sets of working apparatus, and equipment. At the end of the course, or earlier at the discretion of the instructor, all the individual equipment in good order must be returned. Such as may have been lost, damaged, broken or destroyed by the student is to be paid for by him at that time.

Materials and apparatus of every kind consumed, wasted, lost or broken in the manifold experiments and practices in laboratories must be paid for by the student.

For the economic and prompt supply of such material coupon

books are furnished at the business office, in amounts of one, two and five dollars. Any coupons unused are redeemable in cash at the Secretary's office when the student has completed the course and checked in his individual equipment.

OTHER EXPENSES. There are no dormitories connected with the University. Students find accommodations in the boarding-houses and homes in Lawrence. Information concerning the location of rooming- and boarding-places may be had at the office of the Registrar.

The average price of board, rooms, light and fuel may be placed at from \$4 to \$4.50 a week. Some persons who furnish plain rooms and good, plain food receive students at \$3 and \$3.50 a week. Day board in private families and at city restaurants may be obtained for \$3 to \$4 a week. Day board in clubs varies from \$2.75 to \$3.50 a week. Furnished rooms, usually occupied by two students, range from \$4 to \$15 a month. Unfurnished rooms rent for \$1.50 to \$3 a month. Students who can supply their own furniture and buy and prepare provisions for the table themselves can attend the University for very little cost in money.

The following table shows the estimated expenses of a student of the College for a year, excluding clothing and traveling expenses; the expense varies with the course pursued, and also depends upon the tastes and habits of the student:

	<i>Low.</i>	<i>Average.</i>
Board	\$120 00	\$160 00
Room	20 00	40 00
Books and stationery.....	8 00	15 00
Laundry	8 00	20 00
Matriculation and other fees...	15 00	15 00
Incidentals	15 00	50 00
Totals	\$186 00	\$300 00

APPROVED ROOMING-PLACES. By order of the Board of Regents of the University, the Registrar keeps a list of approved rooming-houses, which is made up of those rooming-houses only whose proprietors agree to confine their roomers to one sex, and to provide a sitting-room in case their rooms are occupied by young women. This list is called to the careful attention of parents whose daughters are about to enter the University.

SELF-HELP. Many students find work in private families, in offices, and in various occupations, by means of which they defray a portion of their expenses. Some students have earned their entire expenses while in attendance, and have made good

records at the same time; other students have done so much work that they have not been able to keep up their studies, and have thus missed the one thing for which they came. If it is possible for the student to have a part of his expenses paid, he should not attempt to earn his way entirely by his own exertions. The University cannot guarantee work to any student, but will lend every possible assistance in finding employment. The University maintains an employment bureau, where the names of those seeking work and of those desiring workers are recorded. Students desiring places where they may help themselves are advised to apply to the Registrar of the University or to the University Y. M. C. A. or Y. W. C. A.

THE PROGRAM OF STUDY

Leading to the Degree of Bachelor of Arts.

AMOUNT OF WORK REQUIRED.

To secure the degree of bachelor of arts the candidate is required to have completed 126 hours of work, of which 120 hours must be regular class work. The six additional hours required must be distributed as follows:

In the Freshman year, one hour of hygiene and one hour of gymnasium practice, the first term; and two hours of gymnasium practice the second term. In the Sophomore year, one hour of gymnasium practice in each term.

The sixty hours of class work required during the Freshman and Sophomore years must be distributed according to the plan described below.

The sixty hours of class work required during the Junior and Senior years may be elected by the candidate without any restriction, except that not more than twenty hours may be taken under one instructor.

AMOUNT OF WORK TO BE CARRIED AT ONE TIME.

Students of the College must be enrolled in not less than fourteen nor more than eighteen hours of work, but all applications for enrolment are subject to the approval of the Dean.

When the past record or current work of a student indicates that he is unable to carry advantageously the amount of work permitted by the above regulation, he may be limited in his enrolment to such extent as may be considered just in his case.

The Faculty urgently advises students to confine themselves to the average number of fifteen hours of class work, and thus devote four full years to the completion of their undergraduate work. Experience has shown that the crowding of the undergraduate course results in serious loss in the quality of the work accomplished. The excess over fifteen hours permitted by the rule should be used for making up entrance deficiencies.

REQUIRED AND ELECTIVE COURSES.

The University regards the work of the first two years of the College course as essentially connected with the preparatory work as preliminary fundamental work necessary to the more specialized courses of the last two years. The preparatory work and the work of the Freshman and Sophomore years are, therefore, considered together.

Fifteen units are required for admission, as given in detail on page 82. Of these fifteen preparatory units five and one-half are specifically required, six are required by group, while the remaining three and one-half are chosen without restriction from the list of entrance subjects.

During the first two years in the College sixty hours of class work, fifteen each term, must be completed. Five hours of such work constitute what is known as a "College unit." Three College units constitute the class work of each term. These twelve College units added to the fifteen entrance units make a total of twenty-seven units which must be completed, in the preparatory school and the College, before the end of the Sophomore year.

Of the twelve College units to be completed during the Freshman and Sophomore years, one, elementary rhetoric, is specifically required, unless it is offered for entrance as a fourth year of English. The remaining eleven units are to be chosen from the courses open to Freshmen and Sophomores on the conditions that not more than twenty hours may be taken in one department and that from each group a certain number of units must have been completed, either in the preparatory school or the College, before the end of the Sophomore year. The number of units so required is given with the names of the groups in the table on a following page.

A course may not be chosen which substantially duplicates the work of a course which has been offered for entrance credit.

MEDICAL SUBJECTS FOR COLLEGE STUDENTS.

A student of the College, having attained full Senior standing, may elect all of the work of his Senior year from the curriculum of the School of Medicine and have the same credited toward the A. B. degree. To secure this privilege the candidate must register in the School of Medicine as well as the College during his Senior year, and must complete all the work of the second year of the course in medicine.

Candidates for both A. B. and M. D. degrees who desire to avail themselves of the foregoing regulation must have registered in both the College and the School of Medicine during their Junior year and have completed those courses which are common to the curriculum of the College and the curriculum of the School of Medicine.

LAW SUBJECTS FOR COLLEGE STUDENTS.

A student of the College, having attained a full Senior standing, may elect not to exceed one-half of the work of his Senior year, or fifteen hours, from the curriculum of the School of Law and have the same counted toward the A. B. degree. To secure this privilege the candidate must register in the School of Law as well as the College during his Senior year, and must confine his election to the first year of the curriculum of the School of Law.

BUSINESS IN ITS HIGHER RELATIONS.

General Business, Banking, Insurance, and Journalism.

The following courses do not in any sense form a school of commerce or business, nor is such a school contemplated. They are organized within the College of the University. They are not, except as to the regular required work of all students in the College, required courses, but are made up of the electives open to all students alike.

The courses are designed, however, to offer to the large number of men who enter business from the University somewhat the same definite assistance that it gives those who are to be engineers, lawyers, etc. This has been made possible by a large development of late years of special courses in language, history, mathematics, sociology, and economics. It is not expected that the University can do more than to organize into programs of study leading to definite ends such courses as now may be offered, and such others, few in number, as it may be possible to add. The University does not seek to furnish that large portion of business training which can come only from experience. It undertakes to give the fundamental and specialized courses of study that illustrate the economic forces that control the business world. It aims at the same time to give the cultural training which is indispensable to the thoroughly enlightened citizen.

LECTURES.

In addition to the regular classroom work, lectures will be given by men eminent in the profession or calling which they represent. The lectures will have for an object the illustrating from experience of the theory presented in the classroom, and of the relation of the fundamental principles enumerated in the courses to actual experience. Students in these courses will be expected to attend the lectures.

GRADE OF THE WORK.

The following courses are therefore based upon the requirements for entrance to the College, and also upon the required work of the Freshman and Sophomore years. The remaining work is in the main definitely suggested for the guidance of the student in his choice of subjects. It is also rather more exact-

ing in its requirements than the average work elected by students.

PROGRAM OF STUDY.

Freshman and Sophomore Years, in All Courses.

In the Freshman and Sophomore years, the courses in general business, insurance, banking and journalism are alike, except that in the Sophomore year of the course in journalism are required two courses in newspaper reporting (English language, 3 and 4).

REQUIREMENTS.

1. Students entering these courses must have met the requirements for admission to the Freshman class of the College.

2. Students entering these courses must do also all the required work of the Freshman and Sophomore years, as laid down in this catalogue.

3. After doing the required work of the Freshman and Sophomore years, thirty hours of work remain in those years, which should be so distributed that not less than three hours of work are taken in each of the following subjects:

English.

Foreign Language.

Physical Science (Physics if not taken in high school and if Insurance is wanted).

Biological Science.

Elements of Economics.

European History.

Mathematics.*

IN GENERAL BUSINESS.

JUNIOR YEAR.

First Term:

American Jurisprudence and Elementary Law, or Contracts.
Five hours.

History of Commerce and Commercial Geography. Three hours.

Elements of Sociology. Three hours.

Foreign Language, or English. Two or three hours.

Physical Science, or Mathematics. Three or two hours.

* Students entering the Freshman class with plane trigonometry, or who take plane trigonometry in the Freshman year, may take surveying here.

Second Term:

- Financial History of the United States. Three hours.
- Economic Resources and Activities of European Countries. Two hours.
- Constitutional Law. Three hours.
- International Law. Two hours.
- English, or Foreign Language. Three or two hours.
- Mathematics, or Physical Science. Two or three hours.

SENIOR YEAR.

First Term:

- Public Finance. Three hours.
- Corporate Finance. Two hours.
- Social Pathology. Two hours.
- Transportation. Two hours.
- Labor Problems and History of Trade-unionism. Three hours.
- History, English, Foreign Language, or Physical Science. Three hours.

Second Term:

- Transportation. Three hours.
- Accounting. Two hours.
- Social and Economic Statistics. Two hours.
- European History of the Nineteenth Century. Three hours.
- Foreign Language, or English. Two hours.
- Administration of Charitable and Penal Institutions. (Social Path. con.) Three hours.

IN BANKING.

JUNIOR YEAR.

First Term:

- American Jurisprudence and Elementary Law, or Contracts. Five hours.
- Money and Credit. Two hours.
- History of Commerce and Commercial Geography. Three hours.
- Foreign Language, or English. Two or three hours.
- Mathematics, or Physical Science. Three or two hours.

Second Term:

- Banking. Two hours.
- Financial History of the United States. Three hours.
- Constitutional Law. Three hours.
- International Law. Two hours.
- English, or Foreign Language. Two or three hours.
- Physical Science, or Mathematics. Three or two hours.

SENIOR YEAR.

First Term:

- Public Finance. Three hours.
- Corporate Finance. Two hours.
- Transportation. Two hours.
- Labor Problems and History of Trade-unionism. Three hours.
- Presidential Administrations. Five hours.

Second Term:

- Economic Resources and Activities of European Countries. Two hours.
- Transportation. Three hours.
- Accounting. Two hours.
- European History of the Nineteenth Century. Three hours.
- Presidential Administrations. Five hours.

IN INSURANCE.

JUNIOR YEAR.

First Term:

- American Jurisprudence and Elementary Law, or Contracts. Five hours.
- Money and Credit. Two hours.
- Foreign Language or English. Two or three hours.
- Physical or Biological Science. Three or two hours.
- Mathematics. Three hours.

Second Term:

- Banking. Two hours.
- Financial History of the United States. Three hours.
- Physical or Biological Science. Two or three hours.
- English, or Foreign Language. Two hours.
- Mathematics. Three or two hours.
- Building Materials. Three hours.

SENIOR YEAR.

First Term:

- Law of Insurance and Agency. Five hours.
- Public Finance. Three hours.
- Corporate Finance. Two hours.
- History of Commerce and Commercial Geography. Three hours.
- Transportation. Two hours.

Second Term:

- Transportation. Three hours.
- Insurance. Three hours.
- Accounting. Two hours.
- Social and Economic Statistics. Two hours.

Economic Resources and Activities of European Countries.
Two hours.

English, or Foreign Language. Three hours.

IN JOURNALISM.

The design of this course is to give a working understanding of the duties of the newspaper office, with drill in the actual preparation of "copy" for the press and the editing of the same. In the newspaper-writing section the various departments of the paper are taken up, discussed both by the instructors and by newspaper men from outside papers, and actual writing is required to show familiarity with the principles of journalism. The city papers and the University papers are furnished with news matter, and actual practice is thus secured. In the Sophomore year students take work in the newspaper class, with especial attention to reporting and assignments to the beginning steps of newspaper work, this being a part of the regular work in English. The Senior year includes also editorial work in the revising and editing of "copy" prepared by beginners. The duties of every editorial department of a newspaper are practiced in class and in exercises on which careful preparation is required. Assignments to work on the city papers are on occasion filled by those members of the Senior class who show proficiency. Frequent lectures by editors and newspaper writers assist materially in giving a clear understanding of the needs of the profession.

JUNIOR YEAR.

First Term:

American Colonial History. Five hours.

Elements of American Jurisprudence (*a*). Two and one-half hours.

Elementary Law (*b*). Two and one-half hours.

Advanced English Composition. Two or three hours.

Ethics, Economic History of England, or English or other Literature. Two or three hours.

Second Term:

Constitutional Law. Three hours.

International Law. Two hours.

English or other Literature. Three or two hours. (See Eng. Lit. 12.)

Advanced English Composition. Two or three hours.

Economic History of the United States. Three hours.

Ethics, Banking, or Economic Resources and Activities of European Countries. Two hours.

SENIOR YEAR.

First Term:

- Newspaper Writing. Three hours.
- English Literature. Two hours.
- American History. Five hours.
- Elements of Sociology, or Public Finance. Three hours.
- Social Pathology, or Corporate Finance. Two hours.

Second Term:

- Newspaper Writing. Two hours.
- English Literature. Three hours.
- American History. Five hours.
- Social Pathology (continued), or Financial History of United States. Three hours.
- Social and Economic Statistics, or Elements of Sociology (con.) Two hours.

PUBLIC LECTURES, 1907-'08.

Course in Newspaper Writing.

- OCTOBER 7, 1907. C. M. Harger, *Abilene Reflector*, "Newspaper English and Copy."
- OCTOBER 14. Frank Snow, "A Reporter in South Africa."
- OCTOBER 18. Ralph Faxon, "Newspaper English."
- NOVEMBER 5. C. M. Harger, "Editorial Writing."
- NOVEMBER 15. W. C. Simons, *Lawrence World*, "Advertising."
- DECEMBER 4. C. M. Harger, "Editorial Writing."
- DECEMBER 13. Walter Williams, *Columbia Herald*, "The Newspaper Profession."
- JANUARY 7, 1908. C. M. Harger, "Telegraph News."
- JANUARY 17. W. E. Blackburn, *Anthony Republican*, "Seeing Things."
- JANUARY 23. C. M. Harger, "Correspondence."
- JANUARY 31. J. Frank Smith, *Pleasanton Observer*, "Making a Country Newspaper."
- FEBRUARY 18. C. M. Harger, "Proof-reading."
- FEBRUARY 28. Charles W. Barnes, *Osage City Free Press*, "Interviews."
- MARCH 6. J. L. Brady, *Lawrence World*, "The News End."
- MARCH 13. J. L. Bristow, *Salina Republican-Journal*, "The Editorial Page."

IN DOMESTIC SCIENCE.

The University offers for next year a few courses in domestic science. These courses are of strictly University grade, and, if experience warrants, will be added to as time goes on until a fully formulated course results. The work is organized

within the College and the courses given are on the same plane as other elective courses. Students electing such work must conform to all requirements for entrance to the Freshman class of the College, and must do all the required work of the Freshman and Sophomore years. The work in the main is open to Juniors and Seniors only.

The following courses will be offered for the year 1907-'08:

HOUSEHOLD ARCHITECTURE. To include, among other things, sanitation, ventilation, decoration, etc., together with lectures upon trees, plants, and grounds. One term.

PHYSIOLOGY AND HYGIENE. To include, among other things, simple applied therapeutics, treatment of accidents, the principles of nursing, etc. One term.

SOCIOLOGICAL AND HISTORICAL STUDY OF THE FAMILY. One-half term.

BACTERIOLOGY. To include a treatment of the more important bacteria of food and water, and the prevention of the spread of infectious diseases. One-half term.

PHYSICAL EDUCATION, THEORY AND PRACTICE. To include, among other things, the physiology of childhood and the physical education of children.

CHEMISTRY AND PHYSIOLOGY OF FOODS. To include, among other things, dietetics, balanced rations, standard supplies, and full laboratory work. One term.

DETAILED COURSES OF STUDY.

UNDERGRADUATES AND GRADUATES.

ANATOMY.

Professor SUDLER.

Doctor SMITH.

EQUIPMENT.—The department occupies the lower floor of Medical Hall, and uses the lecture-room on the floor above. The dissecting-rooms are well lighted and comfortable. A reference library, models and specimens are provided. Students are furnished with a skeleton and well-preserved dissecting material, for which a fee is charged covering the actual cost of the material consumed. They are expected to furnish dissecting instruments and two gowns for use in the dissecting-room.

FOR ADVANCED UNDERGRADUATES AND GRADUATES.

1.—DESCRIPTIVE ANATOMY. Seven hours, 1st term, daily, 8 to 12:15. The first two weeks are occupied by a study of osteology. This is intended as an introduction to the study of anatomy. The vertebral column is considered from a morphological standpoint and the various bones studied by means of drawings and modeling. The balance of the term is devoted to dissection of the arm and leg and study of various preparations and models illustrating these parts. Professor Sudler.

2.—DESCRIPTIVE ANATOMY. Eight hours, 2d term, daily, 8 to 12:15. During this term the abdomen, thorax and head are carefully dissected and studied. This course is a continuation of course 1. Professor Sudler.

ASTRONOMY. (See Mathematics.)

BOTANY.

Professor STEVENS.

Associate Professor BILLINGS.

Assistant Professor STERLING.

Mr. AGRELIUS, Fellow.

Mr. STARIN.

Mr. KENOYER.

EQUIPMENT.—The department is provided with laboratories and essential working appliances for general morphology, plant histology, systematic botany, herbarium, plant physiology, and bacteriology. The equipment embraces microtomes, paraffin

baths, etc., for histological work, simple and compound microscopes for each student, individual sets of apparatus for physiological experiments, and apparatus for carrying on bacteriological research according to the best methods. In connection with the laboratory for plant physiology is a workroom supplied with tools and machinery for the construction of apparatus as needed. There is a departmental library, in which are at hand the books of reference needed by the students in connection with their laboratory work, and the general library contains the leading botanical periodicals.

ADVICE AS TO CHOICE OF COURSES.—Courses 1 or 3 or their equivalent in other schools are prerequisites to all other courses in botany. Course 1 affords an introduction to the general field of botany. Students who enter the University with less than a high-school year in botany should consult with the department about the best first course in botany following their high-school preparation. Students who have completed a high-school year in botany may not take course 1 for credit, for they are supposed to have covered the ground of this course at the high school, and are prepared to enter courses 2, 3, 5, and 11, which are elementary in their several fields. The student should take course 3 following course 1 or its high-school equivalent, if he wishes to get an intimate acquaintance with the morphology and life-histories of the different groups of plants, from the lowest to the highest; or course 2, if he wants to acquire histological technique and to understand the cellular structure of plants and how plants are equipped to perform their physiological functions, and to prepare himself for plant physiology in course 4; or course 5, if he desires, first of all, to broaden his knowledge of the morphology and systemy of the flowering plants. If, after course 1, the student wishes to elect two courses that would best enrich his general information about plants, courses 2 and 3 should be chosen. If a basis for a knowledge of sanitation is desired, course 3, 11 or 12 should be selected. Courses 1, 2, 3, 4, 5 and 11 are fundamental to scientific plant culture. Course 13 is designed to help those students who want a knowledge of the essentials of plant culture and the principles of selecting and arranging plants in the laying out and planting of grounds. Students who are preparing to teach botany in high schools should take courses 1, 2, 3, 4, 5, and 11.

FOR UNDERGRADUATES ONLY.

1.—GENERAL MORPHOLOGY OF PLANTS. Five hours, 2d term, at 1:30 to 3:30. An introduction to the forms and parts of

plants, and the way typical plants perform their functions and conform to their environment. This course or course 3, or the equivalent in other schools, is a prerequisite to all succeeding courses in botany. Laboratory work ten hours a week, reading, recitations, and lectures. Open to all students of the College. Professor Stevens, Assistant Professor Sterling, Mr. Agrelius.

2.—PLANT HISTOLOGY. Five hours, 1st term, at 1:30 to 3:30. A study of plant tissues, with special reference to their development and functions; plant products, their origin and physiological and biological significance; histological technique. Laboratory work ten hours a week, recitations, and lectures. Open to all students of the College who have taken course 1 or its equivalent. Professor Stevens, Mr. Agrelius, Mr. Staria.

3.—GENERAL MORPHOLOGY OF CRYPTOGRAMS. Three hours, Monday, Wednesday, and Friday, 2d term, 10:15 to 12:15. Laboratory work, lectures and recitations six hours a week. Structure and reproduction of plants from the standpoint of evolution. Open to all students. Associate Professor Billings.

FOR ADVANCED UNDERGRADUATES AND GRADUATES.

4.—EXPERIMENTAL PLANT PHYSIOLOGY. Five hours, 2d term, at 3:30 to 5:30, or by appointment. Laboratory work ten hours a week, reading, and conferences. Open to Juniors and Seniors who have taken course 2. Professor Stevens.

5.—TAXONOMY OF PHANEROGAMS. By appointment, three or five hours, 2d term. Classification of plants, with the preparation of a herbarium and of slides illustrating the structure of roots, stems and leaves. Laboratory work six or ten hours a week. Associate Professor Billings.

6.—MORPHOLOGY OF FUNGI. Three hours, 1st term, Monday, Wednesday and Friday, 8 to 10. Lectures, with laboratory work six hours a week. Structure and reproduction of fungi, with special attention to species causing damage to crops. Open to Juniors and Seniors who have taken course 3 or its equivalent. Associate Professor Billings.

7.—MORPHOLOGY OF ALGÆ. Two hours, 1st term, Tuesday and Thursday, 8 to 10. Lectures, with laboratory work four hours a week. Open to Juniors and Seniors who have taken course 3 or its equivalent. Associate Professor Billings.

8.—PLANT EMBRYOLOGY. Five hours, 2d term, daily, hours to be arranged. Laboratory work, with lectures, ten hours a week. Open to Juniors and Seniors who have taken course 2 or its equivalent. Associate Professor Billings.

9.—PROBLEMS IN THE MORPHOLOGY OF SPERMATOPHYTES. By appointment, three hours, five hours, or ten hours, 1st or 2d term, or both terms. A study of the forms of plant members under varying environment. Laboratory work, field-work, and reading. Professor Stevens.

10.—PROBLEMS IN HISTOGENESIS. By appointment, three hours, five hours, or ten hours, 1st or 2d term, or both terms. A study of the development of the tissues in selected plants. Professor Stevens.

11.—BACTERIOLOGY. Three hours, 1st term, Monday, Wednesday and Friday, 10:15 to 12:15. Laboratory work and recitations. A general course in preparation of media, culture methods and staining. Associate Professor Billings and Mr. Starin.

12.—DAIRY BACTERIOLOGY AND WATER ANALYSIS. Three hours, 1st term, Monday, Wednesday and Friday, 10:15 to 12:15. Laboratory work, with recitations, six hours a week. Relation of bacteria to milk and its products. Bacteriological examination of water. Open to students who have taken course 12 or its equivalent. Associate Professor Billings and Mr. Starin.

13.—DOMESTICATED PLANTS. Two hours, 1st term, Tuesday and Thursday, 3:30 to 4:30, or by appointment. The origin and amelioration of cultivated plants. Methods of propagation and culture of trees, shrubs, herbaceous perennials, and annuals. The planting of private and public grounds. Readings and lectures and demonstrations. Professor Stevens.

FOR GRADUATES ONLY.

14.—SPECIAL MORPHOLOGY OF CRYPTOGRAMS OR PHANEROGAMS. By appointment, five or ten hours a week, 1st or 2d term, or both terms. Associate Professor Billings.

15.—MORPHOLOGY AND PHYSIOLOGY OF THE PLANT CELL. By appointment, five hours or ten hours, 1st or 2d term, or both terms. A study of cell forms, their adaptation to specific functions, and their behavior under varying environment; nuclear and cell division; reproduction. Professor Stevens.

16.—PLANT ECOLOGY. By appointment, three hours, five hours or ten hours, throughout the year. The relation of plants to their environment. Field-work and reading. Warming's and Schrimper's texts and current literature. Professor Stevens.

17.—BOTANICAL SEMINARY. One hour, by appointment. Review and discussion of current botanical work. Reports on as-

signed subjects. Open to graduates and advanced undergraduates.

CHEMISTRY.

Professor BAILEY.
Professor SAYRE.
Professor DUNCAN.
Associate Professor CADY.
Assistant Professor MCFARLAND.
Assistant Professor BUSHONG.
Assistant Professor JACKSON.
Assistant Professor LANDRUM.
Mr. RUPERT.
Miss HEDGER.
Mr. HASLAM.
Mr. TAGUE.
Mr. FARAGHER, Fellow.
Mr. SHUEY, Fellow.

EQUIPMENT.—The Chemistry Building, which was completed in 1900, affords abundant laboratory space for carrying on the work. The rooms are furnished with gas, water, vacuum for rapid filtering, distilled water, and compressed air. The balance-rooms on each floor, storerooms, and instructors' rooms conveniently located, afford every facility for scientific research. The laboratory for general chemistry accommodates 140 students working at one time, or 280 in two divisions; the qualitative laboratory has a sufficient number of desks for 72 students working at the same time, or 144 in two divisions; the quantitative laboratory accommodates 80 students, and the organic laboratory 72 students working at one time, or 144 in two divisions. The large lecture-room will seat over 300. In addition to these rooms, there are numerous smaller laboratories and classrooms that will each accommodate from ten to fifty students. Each student is assigned a desk and is loaned apparatus for his individual use. Hoods to carry off injurious gases are placed between all the windows in the large laboratories, and, with a constant pressure of air produced by a fan blower, abundant ventilation is secured. A liquid-air plant of unusual efficiency has been installed, which affords excellent facilities for making researches at extremely low temperatures. The assay laboratory, located in the basement, is provided with the usual muffle and crucible furnaces, and well stocked with ores for experimental use. A metallurgical laboratory has been recently installed, with gas-blast furnaces and other improved appliances.

For illustration and demonstration in lectures there are supplied projection lanterns, cylinders of compressed gases, apparatus for testing coal-oil, gas, alcohol; standard sets of ther-

mometers and hydrometers, combustion furnaces, analytical balances; mineral collections; 800 specimens for illustrating organic chemistry; a collection of food products and adulterated foods; a mineral-water collection; sets of specimens for illustrating the manufacture of china, leather, zinc, glass, fats, soap, alcoholic liquors, gunpowder, fertilizers, white lead, acids, oils, cements, etc. In addition to these, the apparatus for use in physical chemistry has been recently increased by the purchase of several hundred dollars' worth of electrical instruments and apparatus for thermochemistry, for the determination of molar weights, and for the measurement of the critical constants of liquids, so that the department is well equipped for work in this line.

The work of the State Water Survey and a great part of the work for the enforcement of the Kansas food and drug law of February 14, 1907, is carried on in special laboratories in the Chemistry Building.

ADVICE AS TO CHOICE OF COURSES.—Students desiring to become professional chemists should take the following studies: Elementary chemistry, advanced inorganic chemistry, qualitative analysis, quantitative analysis, organic chemistry, industrial chemistry, physical chemistry, metallurgy

Those desiring to teach should select not less than twenty-five hours from the following: Elementary chemistry, advanced inorganic chemistry, qualitative analysis, sanitary and applied chemistry, chemistry and physiology of foods, organic chemistry, physical chemistry.

For the medical course, any studies in the above lists not required in the Medical School may be selected.

For mining and metallurgical work, the courses are prescribed in the Engineering School, but additional work in quantitative analysis and industrial chemistry is very desirable.

For business or general culture, as a foundation for work in any biological science, or in physics or mineralogy, at least elementary chemistry, advanced inorganic chemistry and organic or qualitative analysis should be taken.

Those who desire to take graduate work will be expected first to make up undergraduate work to the point where they can do graduate work satisfactorily.

FOR UNDERGRADUATES ONLY.

1.—**ELEMENTARY CHEMISTRY.** Five hours, daily. Experimental lectures, recitations, and laboratory work. 1st term, 1:30 to 3:30; 2d term, 10:15 to 12:15. Laboratory work on

Tuesday and Thursday, at the above hours, or 3:30 to 5:30. Lectures and recitations, Monday, Wednesday, and Friday, at 11:15. This is a study of the elements and their compounds, with the use of McPherson and Henderson's Study of Elementary Chemistry or some work of the same scope. Open to all students in the College. Professor Bailey, Assistant Professor McFarland, and Miss Hedger and assistants.

2.—INORGANIC CHEMISTRY. Five hours, daily, 1st term. Lectures and recitations, Monday, Wednesday, and Friday, 8 to 9. Laboratory, Tuesday and Thursday, either 8 to 10 or 1:30 to 3:30. Ostwald's Principles of Inorganic Chemistry, translated by Alexander Findlay. Open to all students of the College who have taken course 1a or 1b. Associate Professor Cady and Mr. Rupert.

3.—QUALITATIVE ANALYSIS. Five hours, daily, 2d term, 8 to 10. Lectures and laboratory work. Bailey and Cady's Guide to the Study of Qualitative Analysis. Open to all students of the College who have taken course 2. Associate Professor Cady and Mr. Rupert.

4.—INDUSTRIAL CHEMISTRY. Three hours, 1st term, Monday, Wednesday, and Friday, at 9. This course includes a technical study of the manufacture of acids, alkalies, explosives, glass, pottery, porcelain, mortars, cements, paper, alcohol, vinegar, leather; also of dyeing, calico printing, and similar industries. Thorp's Outlines of Industrial Chemistry. Open to Juniors and Seniors who have taken course 1a or 1b. Professor Duncan.

5.—SANITARY AND APPLIED CHEMISTRY. Two hours, 1st term, Tuesday and Thursday, 10:15 to 12:15. A practical study of the atmosphere; domestic fuels, heating, and ventilation; artificial lighting; water-supplies and methods of purification and filtration; sewage; the use of soap, disinfectants, and antiseptics. Bailey's Sanitary and Applied Chemistry, part I. Lectures, recitations, and laboratory work. Open to Juniors and Seniors who have taken the equivalent of course 1a or 1b. Professor Bailey.

6.—THE CHEMISTRY AND PHYSIOLOGY OF FOODS. Three hours, 2d term, Monday, Wednesday, and Friday, 1:30 to 3:30. A study of food-supply, its source, composition, liability to falsification and adulteration; preparation of foods and methods of preservation. This course will also include a study of dietetics from a chemical standpoint, balanced rations, economy of foods, and the digestive processes. In connection with the latter topic,

lectures will be given by Professor Sayre on digestive ferments. Bailey's Sanitary and Applied Chemistry, part II. This is not necessarily preceded by course 5. Lectures, recitations, and laboratory work. Open to Juniors and Seniors who have taken the equivalent of course 1a or 1b. Professor Bailey and Professor Sayre.

FOR ADVANCED UNDERGRADUATES AND GRADUATES.

7.—QUANTITATIVE ANALYSIS. Five hours, 1st term, daily, 3:30 to 5:30; or 2d term, daily, 10:15 to 12:15. Lectures and laboratory work. Must be preceded by course 3. Assistant Professor Landrum and Mr. Tague, 1st term; Assistant Professor Landrum, 2d term.

8.—QUANTITATIVE ANALYSIS. Advanced course. Five hours, 1st term, daily, 3:30 to 5:30; or 2d term, daily, 10:15 to 12:15. Must be preceded by course 7. Either of the subjects mentioned below may be taken: (a) Chemistry of the cement industry; (b) chemistry of the packing-house industries; (c) iron analysis; (d) rock analysis. Assistant Professor Landrum, 1st term; Assistant Professor Landrum, 2d term.

9.—GAS ANALYSIS. Two hours, 1st term, Tuesday and Thursday, by appointment. A laboratory course in the quantitative determination of common gases, analysis of gaseous mixtures, flue gases, natural gas, etc.; also, gas calorimetry and calculation of heat value. Both exact methods of analysis and technical methods will be employed. Gill's Gas Analysis and Hempel's Gas Analysis. Must be preceded by course 7. Assistant Professor McFarland.

10.—OIL ANALYSIS. Three hours, 2d term, Monday, Wednesday and Friday, by appointment. A laboratory course in the analysis of animal, vegetable or mineral oils. Determination of the specific gravity, viscosity, and other constants. Distillation, as applied to mineral oils. Must be preceded by course 8. Professor Duncan.

11.—ELECTROLYTIC ESTIMATION OF METALS. Two hours, 2d term, by appointment. A laboratory course in the practical work of analysis by electrolysis, including the use of the rotating cathode. Must be preceded by course 7. Professor Cady.

12.—SUGAR ANALYSIS. Two and one-half hours, by appointment, second term (b). A laboratory course. Must be preceded by course 7. Assistant Professor Jackson.

13.—WATER ANALYSIS. Three hours, 2d term, by appointment. A study of the mineral and sanitary analyses of waters

Mason's Water Analysis, and volume VII (Mineral Waters), University Geological Survey of Kansas. A laboratory course. Must be preceded by course 7. Assistant Professor Bushong.

14.—ASSAYING AND METALLURGICAL ANALYSIS. Five hours, 2d term, daily, 3:30 to 5:30, and by appointment. This is a course in the fire assay of the ores of gold, silver, and lead, followed by the volumetric analysis of the ores of copper, lead, iron, zinc, manganese, etc., and the analysis of bullion. Lectures and laboratory work. Lodge's Notes on Assaying, and Low's Technical Methods of Ore Analyses. Must be preceded by course 7 and mineralogy 1. Assistant Professor McFarland and Mr. Tague.

15.—FOOD ANALYSIS. Five hours, either term, by appointment. This is a laboratory course, designed for those who wish to make a specialty of testing the composition of food and its adulteration. It should be preceded or accompanied by a course in the use of the microscope and in bacteriology. Open to Juniors and Seniors who have taken courses 1, 2, and 3. Professor Bailey and Assistant Professor Jackson.

16.—ORGANIC CHEMISTRY I. Five hours, 1st term, daily, 3:30 to 5:30. A study of the hydrocarbons and their derivatives. Lectures, recitations, and laboratory work. Must be preceded by courses 1 and 2. Professor Duncan and assistants.

17.—ORGANIC CHEMISTRY II. A continuation of course 16. Five hours, 2d term, daily, 3:30 to 5:30. Lectures and laboratory work. Professor Duncan and assistants.

18.—ORGANIC PREPARATIONS, ADVANCED. Five hours, either term, by appointment. A continuation of the work of the previous course. Must be preceded by course 17. A special study of organic synthetical methods, as well as of ultimate organic analysis of carbon, hydrogen, nitrogen, sulfur, and the halogens. Professor Duncan.

19.—METALLURGY I. Five hours, 1st term, daily, at 11:15. General metallurgy and metallurgy of iron and steel. Properties of metals and alloys, metallurgical terms and processes, furnace types, refractory materials and slags, fuel and thermal measurements, calculation of furnace charges, etc., followed by a study of iron and its ores; methods for manufacture of pig iron and wrought iron; manufacture of steel by crucible, Bessemer and open-hearth processes, special steels and special processes; heat treatment and metallography of steel. Must be

preceded by chemistry 3. Required of mechanical and chemical engineers, Senior; optional in the College and for mining engineers, Senior. Assistant Professor McFarland.

20.—METALLURGY II. Five hours, 2d term, daily, at 10:15. Metallurgy of lead, zinc, and copper, followed by metallurgy of silver, gold, mercury, and tin. Study of principal ores and methods of extraction and refining, amalgamation, chlorination and cyanide processes, pyritic smelting, etc. Must be preceded by chemistry 3. Required of mining engineers, Senior; optional in the College and for chemical engineers, Senior. Assistant Professor McFarland.

21.—METALLURGICAL LABORATORY. Three hours (two three-hour periods), either term, by appointment. This course includes: (a) Temperature measurements by thermoelectric, optical and fusion pyrometers, with calibration of instruments; (b) preparation of slags and alloys, with a study of the relation of composition to structure, fusibility, and other properties; (c) study of roasting, reduction and oxidation reactions used in metallurgical processes; (d) amalgamation, chlorination, cyaniding, and leaching; (e) the testing of ores to determine the proper metallurgical treatment. Optional. Open to Juniors, Seniors and Graduates who have taken metallurgy I or II. Assistant Professor McFarland.

22.—PHYSICAL CHEMISTRY. Five hours, 1st term, daily, at 10:15. A course paying special attention to electrochemistry. Lectures and laboratory work. Must be preceded by chemistry 7 or chemistry 3, and general physics and calculus. Associate Professor Cady.

23.—PHYSICAL CHEMISTRY. Five hours, 2d term, daily, at 10:15. A general course in theoretical and physical chemistry. Lectures and laboratory work. Must be preceded by chemistry 7 or chemistry 3, and general physics and calculus. Associate Professor Cady.

24.—ELECTROCHEMISTRY. Five hours, 2d term, daily, by appointment. The study of reactions involving oxidation and reduction, electrosynthesis and decompositions, the preparation of chemicals, the reduction of metals from their ores, and the purification of metallurgical products. A laboratory course, with lectures on the theory and practice of electrochemistry. Must be preceded by course 22. Associate Professor Cady.

25.—CHEMICAL STATICS AND DYNAMICS. Three hours, 2d

term, by appointment. A study of the manner in which chemical reactions take place, and the equilibria which result, from the standpoint of reaction velocities. Must be preceded by general physics, calculus, and organic chemistry. Associate Professor Cady.

26.—THE PHASE LAW. Two hours, 2d term, by appointment. A study of chemical equilibria from the standpoint of the phase law of Gibbs. Associate Professor Cady.

27.—TEACHERS' COURSE. Five hours, either term. Designed for those who desire to teach in high schools. Professor Bailey.

FOR GRADUATES ONLY.

28.—HISTORY OF CHEMISTRY. Three hours, 2d term, by appointment. A course in history of chemistry and the development of chemical theories. Recitations, library work, and the presentation of reports. Offered in 1908-'09 and alternate years thereafter. Professor Duncan.

29.—ANALYTICAL CHEMISTRY. Five hours, either term, by appointment. A research course. This may include the investigation of some problems in metallurgical or manufacturing processes, the complete investigation of some proposed water-supply, the development of new methods in analytical chemistry, or a study and comparison of methods already in use. Professor Bailey.

30.—ORGANIC CHEMISTRY. Five hours, either term, by appointment. A research course. This course offers, to those who have proper preparation, a chance for a more extended study and original investigation. Professor Duncan.

31.—PHYSICAL CHEMISTRY. Five hours, either term, by appointment. A research course extending over two or more terms. An opportunity is offered, to those who are sufficiently advanced, to carry on investigations in this most recently developed branch of chemistry. Associate Professor Cady.

ECONOMICS. (See Sociology.)

DRAWING AND DESIGN.

Professor GRIFFITH.

EQUIPMENT.—The studios of the department of drawing, on the third floor of Snow Hall, are well equipped with a great many casts from the antique; books and plates upon the theory and history of ornament; a fine printing-press, designed for

color printing, and used by the students to duplicate their designs; easels and drawing-boards. The classical museum and the museum of natural history offer an abundance of material for the use of students in design.

ADVICE AS TO CHOICE OF COURSES.—The following courses are optional. Technical students, to whom some drawing is essential, are advised to take course 1. Students wishing training in artistic perception and graphic expression, for its general culture value, must take course 1, followed by 3 and 4.

FOR ADVANCED UNDERGRADUATES.

1.—FREE-HAND DRAWING. Three hours, 1st term, Monday, Wednesday, and Friday, 1:30 to 3:30. Drawing with pencil and charcoal from the cast and objects in still life, which aims to teach the student to construct form in a simple and correct manner; drawing with pen and ink and water-colors for illustrative and reproductive processes. Professor Griffith.

2.—FREE-HAND DRAWING. Three hours, 2d term, Monday, Wednesday, and Friday, 1:30 to 3:30. A continuation of course 1. Professor Griffith.

3.—PRINCIPLES OF ART. Two hours, 1st term, Tuesday and Thursday, at 1:30. A lecture course on the theory of the technical beauties of a work of art, presenting the principles of composition and perspective, together with considerations of technical processes. The object of the course is to give the student a critical knowledge necessary to understand and more fully enjoy a work of art. Professor Griffith.

4.—ORNAMENTAL DESIGN. Two hours, 2d term, Tuesday and Thursday, 3:30 to 5:30. The anatomy of pattern and the planning of ornament. Must be preceded by course 1. Professor Griffith.

5.—ORNAMENTAL DESIGN. Two hours, 1st term, Tuesday and Thursday, 3:30 to 5:30. The application and history of ornament. Must be preceded by course 4. Professor Griffith.

EDUCATION.

Professor OLIN.

Associate Professor SCHWEGLER.

Mr. THOROMAN, Fellow.

EQUIPMENT.—The library facilities for the work of the department include about 1600 volumes listed under the head of "Education," and a large number of volumes listed under other titles. Among these volumes are complete sets of the Reports

of the Commissioner of Education, Horace Mann's Reports, the International Educational Series, the Great Educators Series, etc. There are files of the *Pedagogical Seminary*, the *Educational Review*, the *School Review*, and other high-class educational periodicals. The department also has the beginnings of a museum, including several hundred volumes of school-books, ancient and modern, pamphlets, and samples of school furnishings and apparatus. Weekly sessions of the conference in education are held for the consideration of current literature and discussions of topics in education. These meetings are open to undergraduates, and attendance upon them is required of graduate students in education.

ADVICE AS TO CHOICE OF COURSES.—Courses 1, 2, 3 and 4 are recommended for all students in education. In addition to these, for purposes of general culture, courses 9, 10 and 11 are recommended; the other courses are more for technical study and the practical application of educational principles, and, in general, their numbers up to 14 indicate the order of their advancement. Students intending to qualify for the University teachers' diploma are recommended to begin their work in education with the Junior year.

For the year 1908-'09 the departments of German, French, Latin, English, mathematics, chemistry, European history and entomology will coöperate with the department of education in giving special courses for students intending to become teachers in these various subjects. These teachers' courses and the instructors giving them are listed in the department of education as courses 15 to 22, inclusive. They are also listed in the respective departments originating them.

FOR UNDERGRADUATES ONLY.

1.—HISTORY OF ANCIENT AND MEDIEVAL EDUCATION. Three hours, 1st term, Monday, Wednesday, and Friday, at 3:30. A survey of typical movements in education, the development of systems, and the work of great educators. Professor Olin.

2.—HISTORY OF MODERN EDUCATION. Three hours, 2d term, Monday, Wednesday, and Friday, at 3:30. This is a continuation of course 1, but may be taken separately. It deals with the period from the revival of learning to the present time. Professor Olin.

3.—PRINCIPLES OF EDUCATION. Three hours, 1st term, Monday and Wednesday, at 11:15; third hour by appointment with

the class. The social, mental and physical background of education. A careful analysis of the stages of human growth, with special reference to their meaning in education. Lectures, required reading, and class discussion. Open to Juniors and Seniors who have taken course 1 or 2. Associate Professor Schwegler.

5.—SCHOOL LAW AND ADMINISTRATION. Two hours, 1st term, Tuesday and Thursday, at 3:30. A study of the Kansas laws relating to the maintenance, supervision and administration of schools; comparison with schools laws of other states; individual studies of special state schools of Kansas and city systems of other states. Professor Olin.

6.—SCHOOL ECONOMY. Three hours, 2d term, Monday, Wednesday, and Friday, at 2:30. Conditions and principles essential to efficient school work, school hygiene, organization and authorities of the school, financial support, courses of study, government, library management. Required reading, observation work, class discussions, and lectures. Open to Juniors and Seniors who have taken courses 1 or 2 and 3 or 4. Professor Olin.

7.—METHODS OF INSTRUCTION. Three hours, 1st term, Tuesday and Thursday, at 2:30; third hour by appointment with the class. A critical study of the doctrines of Herbart as applied to the teaching process. Special reference to the mental, moral and physical growth of the high-school student. Lectures and assigned reading, with class discussion of material presented. Open to Juniors and Seniors who have taken courses 1 or 2 and 3 or 4. Associate Professor Schwegler.

8.—SCHOOL SUPERVISION. Two hours, 1st term, Tuesday and Thursday, at 9. This course is largely based on the texts of Chancellor and Pickard, and the reports of the Committees of Twelve and Fifteen. Reports, class discussions, and lectures. Professor Olin.

12.—THE SECONDARY SCHOOL. Three hours, 2d term, Monday, Wednesday, and Friday, at 9. A study of the development, equipment, curriculum, and administration of the American high school. Professor Olin. (Not given in 1908-'09.)

FOR ADVANCED UNDERGRADUATES AND GRADUATES.

4.—PHILOSOPHY OF EDUCATION. Three hours, 2d term, Monday and Wednesday, at 11:15; third hour by appointment with the class. A critical analysis of the biological, psychological and

sociological meaning of education. Class lectures and discussions, based on Horne and Rosenkranz. Associate Professor Schwegler.

9.—COMPARATIVE STUDY OF EDUCATIONAL SYSTEMS. Three hours, 1st term, Monday, Wednesday, and Friday, at 9. A study of the elements of the school systems of England, France, and Germany, and a comparison with the systems of this country. Professor Olin.

10.—EDUCATIONAL CLASSICS. Two hours, 1st term, Tuesday and Thursday, at 10:15. A critical study of the educational doctrines found in Plato's Republic, Quintilian's Institutes of Oratory, and Locke's Thoughts Concerning Education. This course should be preceded by course 1. Associate Professor Schwegler.

11.—EDUCATIONAL CLASSICS. Two hours, 2d term, Tuesday and Thursday, at 10:15. This is a continuation of course 10, but may be taken separately. It involves a critical study of the educational doctrines found in Rousseau's Emile, Herbart's Science of Education, and Herbert Spencer's Education. This course should be preceded by course 2. Associate Professor Schwegler.

13.—SEMINARY. Four hours, 2d term, Monday, Tuesday, Wednesday, and Thursday; hours by appointment. Individual investigation of special subjects in educational philosophy, institutions, and administration. Open to students who have done previously at least eight hours' work in the department. Associate Professor Schwegler.

15.—TEACHERS' COURSE IN GERMAN. Five hours, 2d term. Advanced grammar, with theory and practice of language teaching. Intended especially for those who desire to fit themselves for teaching German in high schools. Open only to the best students of the department. Professor Carruth and Assistant Professor Corbin.

16.—METHODS OF TEACHING ENGLISH. Three hours, 1st term, Monday, Wednesday, and Friday, at 2:30. Principles of teaching English composition, English literature, and English language. Lectures, library reading, illustrative and review work. Must be preceded by English language 5 and 6, 5 and 7, 5 and 8, or 7 and 8, and by at least one three-hour course in English literature, in addition to 1, 2 and 3. Additional credit

up to five hours may be allowed when practice teaching can be arranged for. Professor Hopkins.

17.—TEACHERS' COURSE IN LATIN. Two or five hours, 1st term, Tuesday and Thursday, at 10:15. Two hours a week of classroom work, with or without three hours of practice teaching. The classroom work consists of (a) discussion of the best literature on the aims and methods of teaching Latin, (b) a critical examination of some text-books used in secondary Latin teaching, and (c) a few lectures on the more difficult points in Latin syntax, with readings in portions of the preparatory Latin authors for illustrative examples. Open to Seniors and Graduates. Professor Walker.

18.—TEACHERS' COURSE IN FRENCH. Five hours, 2d term, daily, at 11:15. Systematic review of the grammar from the point of view of the requirements of elementary instruction. Outlines of historical grammar. Study of methods of teaching languages, and practice in teaching. Open only to students who give evidence of fitness for the work. Professor Galloo.

19.—TEACHERS' COURSE IN MATHEMATICS. Two hours or five hours, 2d term, Tuesday and Thursday, at 9. Designed for teachers and students preparing to become teachers of mathematics. It embraces the history, pedagogy and mutual relations of the mathematical subjects usually taught in the public schools from the beginning of the seventh grade to the end of the high-school course. This course consists of (1) history of mathematics, reading, and lectures; (2) a comparative study of the mathematical curricula of the schools of this country and of Europe; (3) discussions on the best methods of presenting the topics. Students taking the above course will receive two hours' credit. A limited number of students selected by the department of mathematics for practice teaching may receive three hours' additional credit for approximately sixty-five hours of teaching. Open to students who have completed courses 1 to 7 in mathematics. Professor Newson.

20.—TEACHERS' COURSE IN CHEMISTRY. Five hours, 2d term. The course consists of three hours' practice work in the instruction of a laboratory and recitation section in one of the elementary courses in the department of chemistry, and two hours of conference and reports on library investigation. Professor Bailey and the instructor in charge of the elementary course.

21.—HISTORICAL METHOD; TEACHERS' COURSE. Two hours, Tuesday and Friday, at 8. Investigation and presentation. A

course in the principles of historical investigation and composition. Designed primarily for advanced students specializing in history and looking toward preparation for a thesis. Required of all candidates for the master's degree in European history and recommended to all intending teachers of history. Study and practice in investigation and writing. Lectures, reports, assigned reading, and comparative study of historical compositions; theses, monographs, and histories. Professor Abbott and Associate Professor Becker.

22.—TEACHERS' COURSE IN ENTOMOLOGY. Three hours, 2d term, 3:30 to 5:30. Laboratory course, adapted to those who expect to teach. Lectures upon life-histories, insect relationships, choice of materials, and modes of presentation. Field-work on habits of social insects. Illustrative cabinets, their preparation and use. Open to Juniors and Seniors who have had zoölogy I. Professor Hunter and Mr. Glenn.

FOR GRADUATES ONLY.

14.—PROBLEMS IN ORGANIZATION, MANAGEMENT AND METHOD IN EDUCATIONAL SYSTEMS. Five hours, 2d term, daily, hours by appointment. Library work, reports, discussions, and lectures. Not open to students who have taken courses 6 and 7. Professor Olin.

ENGLISH LANGUAGE AND RHETORIC.

Professor HOPKINS.
 Professor DUNLAP.
 Associate Professor O'LEARY.
 Associate Professor WHITCOMB.
 Assistant Professor RAYMOND.
 Assistant Professor LYNN.
 Assistant Professor BRYANT.
 Assistant Professor SISSON.
 Assistant Professor GRAY.
 Assistant Professor GARDNER.
 Assistant Professor THOMAS.
 Mr. HARGER.
 Mr. FLINT.
 Mr. MOORE.
 Miss HAYWARD.

EQUIPMENT.—Apart from a number of portraits and historical maps, the equipment of this department is the University library, in which are collections of volumes and periodicals relating especially to rhetoric and composition, to English style and English literary criticism, to journalism and newspaper work in general, and to English philology. Among these are an especially fine collection of important dictionaries, and com-

plete sets of journals, such as *Anglia* and *Englische Studien*, and of such publications as those of the Chaucer Society, the Early English Text Society, and the English and the American Dialect Societies. The number of volumes pertaining more directly to the subjects of this department and not included in the total for English literature is about 1500; and the total for all departments of English is about 7000. A large reading-room is reserved for the use of students in these departments, under the charge of a special librarian.

ADVICE AS TO CHOICE OF COURSES.—The best arrangement of studies for individual students is dependent upon the nature of the work already done and upon the occupation or profession in view. Every student should confer with an instructor upon this matter as early in his course as he possibly can, and in no case later than the beginning of his Junior year. *He should take especial notice of the fact that certain elementary and fundamental courses scheduled for Freshman and Sophomore years—rhetoric 1 and 2 and English literature 1 and 2, or their equivalent—must be completed before he can be admitted to any other English courses whatever; and that English literature 3, scheduled for Sophomore year, is prerequisite to all English courses open to Juniors, Seniors, and Graduates.*

In the three principal departments of English study—English literature, English language, and English composition—every undergraduate student should distribute his attention, choosing his courses with reference to the career he is preparing to enter upon after graduation, but taking care to avoid too narrow a specialization. In whatever department his major work is done, some part of his time should be given to each of the other two. Students whose aim is general culture will ordinarily take major work in English literature, with attention to such courses in language and composition as are literary as well as linguistic. For students contemplating a journalistic or literary profession, major work in English composition is usually advisable, selected from courses 3-10, 19-26, with minor work in literature and language. Intending teachers who wish to make especially thorough preparation for their work may sometimes take major work in English language, selected from courses 11-18; such students should in all cases take at least one elementary course in language, preferably course 11; otherwise 13 or 28. With a major in language should go as minor work courses in literature and composition. In selecting major and

minor work, such courses should be chosen as bear most directly upon the special need and special interest of the individual student, offer sufficient variety of subject and method, and bring the student into contact with several instructors.

For students who are candidates for a teacher's certificate in English, the conditions are somewhat more specific. Such students are required to take not less than thirty hours of English, including the ten hours of Freshman year; and it is recommended that the minimum be thirty-five hours, to include the ten hours of Freshman year and the five hours of English literature 3, so that the study of English shall be continuous through the entire undergraduate course. This required minimum is always to include, besides the courses of Freshman and Sophomore years, three hours of English language, course 11 recommended; five hours of English composition, courses to be selected on consultation with the department head; six hours of English literature, courses to be selected on consultation with the department head. These courses and others included in the recommended total are to be determined according to the candidate's need, taste, and previous study; and if English is the candidate's principal subject, he should endeavor to increase the total number of English courses without neglecting other essential subjects, and should, if possible, add to his undergraduate work in English one year of graduate study. It is especially important that undergraduate candidates for an English teacher's certificate should secure broad acquaintance with their field by electing courses differing widely in character and given by various instructors, differing in methods and points of view. In English literature this means that the time should be divided between general historical courses, intensive courses in particular periods and authors, and courses devoted to the study of particular literary types or species. If to this broad undergraduate foundation one year of specialized graduate study can be added, the candidate will be well equipped for his work.

In the following list, courses 1-10, 19-26, and 29 belong to the rhetorical group; courses 11-18, 28, and 30, to the linguistic. Of these courses, 1, 2, 5, 6, 7 and 8 are fundamental, as explained below; courses 3, 4, 9 and 10 (see, also, course 12 in English literature) are intended especially for journalists, and are required in the general course in journalism outlined in this catalogue. Courses 19-26 are for those interested in advanced Eng-

lish composition and in literary work; courses 27-30 are special courses for teachers; and courses 11-18 for advanced students, whether interested in teaching, language, or literature. The proper relation and succession of these courses are shown in the descriptions following. Courses which are continuations of preceding courses cannot be taken by students who have not had the preceding course or its equivalent, unless it is so stated.

FOR UNDERGRADUATES ONLY.

1.—RHETORIC AND ENGLISH COMPOSITION. Two hours, 1st term, Tuesday and Thursday, at 8, 9, 10:15, 11:15, 2:30, and 3:30. Written and oral themes and exercises, with outlines of rhetorical theory. Required of all Freshman in the College. Associate Professor O'Leary, Assistant Professors Lynn, Bryant, Sisson, Gray, and instructors.

2.—RHETORIC AND ENGLISH COMPOSITION. Three hours, 2d term, Monday, Wednesday, and Friday, at 8, 9, 10:15, 11:15, 2:30, and 3:30. A continuation of course 1. Required of all Freshmen in the College. Associate Professor O'Leary, Assistant Professors Lynn, Bryant, Sisson, Gray, and instructors.

3.—NEWSPAPER REPORTING. Two hours, 1st term, Tuesday and Thursday, at 10:15. Lectures by instructors and others, with regular daily practice in reporting for local and other newspapers. Open to students in the second or Sophomore year of the general course in journalism. Must be preceded by courses 1 and 2 in rhetoric and courses 1 and 2 in English literature. Students who enroll in this course should reserve the 10:15 hour on Monday, Wednesday, and Friday, for working up assignments and preparing copy. The course is a prerequisite for courses 9 and 10. Mr. Harger and Mr. Flint.

4.—NEWSPAPER REPORTING. Three hours, 2d term, Monday, Wednesday, and Friday, at 10:15, preferably with the same hour reserved on Tuesday and Thursday for duties and assignments. A continuation of course 3, under the same general conditions and requirements. Mr. Harger and Mr. Flint.

5.—NARRATION AND DESCRIPTION. Three hours, 1st term, Monday, Wednesday, and Friday, at 8 and 9. A study of general principles, with exercises. A fundamental course, leading to 9 and 10, or to the group 19-26, inclusive. Associate Professor O'Leary and Assistant Professor Lynn.

6.—NARRATION AND DESCRIPTION. Two hours, 2d term, Tues-

day and Thursday, at 8 and 9. A continuation of course 5. Associate Professor O'Leary and Assistant Professor Lynn.

7.—EXPOSITION AND ARGUMENT. Two hours, 1st term, Tuesday and Thursday, at 8. A study of general principles, with exercises and briefs. A fundamental course, leading to 9 and 10, to 19-26, inclusive, or to courses in public speaking and debate. Assistant Professor Sisson.

8.—EXPOSITION AND ARGUMENT. Three hours, 2d term, Monday, Wednesday, and Friday, at 8. A continuation of course 7, but open also to students who have not had course 7. Assistant Professor Sisson.

9.—EDITING AND EDITORIAL WRITING. Three hours, 1st term, Monday, Wednesday, and Friday, at 10:15, preferably with the same hour reserved on Tuesday and Thursday for assignments and office duty. A survey of all departments of newspaper work, with practice in reporting and editing, in editorial and feature writing, and in proof-reading, in connection with local and other newspapers. One or more of the subjects named may be chosen for special attention. Must be preceded by courses 3 and 4, by either 5 and 6, 5 and 8, or 7 and 8, and by one or more courses in English literature in addition to 1, 2, and 3. Mr. Harger and Mr. Flint.

10.—EDITING AND EDITORIAL WRITING. Two hours, 2d term, Tuesday and Thursday, at 10:15, preferably with the same hour reserved on Monday, Wednesday, and Friday. A continuation of course 9, with assignment to newspaper duty and the special study of some department of newspaper making, with thesis. Discussion of the newspaper as a whole, with exercises in its various departments as preparation for actual work. Preparation of manuscripts, practical drill in editing "copy," study of newspaper terms. Conference course. Mr. Harger and Mr. Flint.

FOR ADVANCED UNDERGRADUATES AND GRADUATES.

11.—ELEMENTARY OLD ENGLISH (Anglo-Saxon). Three hours, 1st term, Monday, Wednesday, and Friday, at 9. Introductory course in Old English grammar, with reading of West Saxon texts, chiefly prose. Should be preceded by courses 1 and 2 in German or their equivalent. Required for admission to all advanced courses in English language, except as otherwise specified. Professor Dunlap.

12.—BEOWULF. Three hours, 2d term, Monday, Wednesday,

and Friday, at 10:15. Must be preceded by course 11. Professor Dunlap.

13.—HISTORY OF THE ENGLISH LANGUAGE. Three hours, 1st term, Monday, Wednesday, and Friday, at 1:30. Elements of English philology, including sources and development of the language, its pronunciation, inflections, and syntax. May with advantage be preceded by course 11. Assistant Professor Bryant. (Not given in 1908-'09.)

14.—GENERAL INTRODUCTION TO PHONETICS. Two hours, 1st term, Tuesday and Thursday. (Not given in 1908-'09.) Open to advanced students of any language. Assistant Professor Bryant.

15.—EARLY ENGLISH. Two hours, 1st term, Tuesday and Thursday, at 2:30. Language and literature of the thirteenth century; study of selected texts, with required thesis. Open to students who have had elementary Old English. Professor Hopkins.

16.—MIDDLE ENGLISH. Two hours, 2d term, Tuesday and Thursday, at 2:30. Language and literature of the fourteenth century, exclusive of Chaucer. Open to students who have not had Old English. Professor Hopkins.

17.—THE POEMS OF CÆDMON. Two hours, 2d term, Tuesday and Thursday, by appointment. Must be preceded by course 11. Professor Hopkins.

18.—CYNEWULF'S CHRIST.—One hour, 1st term, by appointment. Reading of text and discussion of problems. Open to students who have had elementary Old English. (Not given in 1907-'08.) Assistant Professor Bryant.

19.—LITERARY CRITICISM. Two hours, 1st term, Tuesday and Thursday, at 1:30. Study of the principles and methods of criticism through its literature, with practice in book reviewing and in critical writing. Professor Hopkins.

20.—LITERARY CRITICISM. Two hours, 2d term, Tuesday and Thursday, at 1:30. A continuation of course 19, with special attention to the history of criticism in England and America. Library with conference course, with required thesis. Associate Professor Whitcomb.

21.—THE DEVELOPMENT OF ENGLISH PROSE. Three hours, 1st term, Monday, Wednesday, and Friday. A study of the development of prose style from the beginning of the sixteenth century to the end of the seventeenth. Lecture and conference course,

with required reading,^{*} reports, and thesis. (Not given in 1908-'09.) Assistant Professor Sisson.

22.—VERSIFICATION. One hour, 1st term, Monday at 3:30. Study of the forms and principles of English verse. Professor Hopkins.

23.—VERSIFICATION. One hour, 2d term, Monday, at 2:30. The history of English verse and verse forms. A continuation of course 22. Open also to students who have not had course 22. Professor Hopkins.

24.—THESIS WRITING. One hour, 2d term. Practice in gathering and handling material, investigating, and testing. (Not given in 1908-'09.) Assistant Professor Sisson.

25.—ESSAY WRITING. Two hours, 2d term, Tuesday and Thursday. (Not given in 1908-'09.) A study of general principles, with exercises. Associate Professor O'Leary.

26.—PROSE INVENTION. Two hours, 2d term, Tuesday and Thursday, at 1:30. General survey of theories of literary art, with practice in original production. Library and conference course, with required thesis. Open only to students who have had one or more advanced courses in English composition. Professor Hopkins.

27.—METHODS OF TEACHING ENGLISH. Three hours, 1st term, Monday, Wednesday, and Friday, at 2:30. Principles of teaching English composition, English literature, and English language. Lectures, library reading, illustrative and review work. Must be preceded by 5 and 6, 5 and 7, 5 and 8, or 7 and 8, and by at least one three-hour course in English literature in addition to 1, 2 and 3. Additional credit up to five hours may be allowed when practice teaching can be arranged for. Professor Hopkins.

28.—OLD AND MIDDLE ENGLISH GRAMMAR. Three hours, 2d term, Monday, Wednesday, and Friday, at 2:30. An elementary course, designed to accompany 27, for intending teachers who have not been able to take courses 11 or 13. Offers a rapid-reading survey of the earlier forms of the English language, as illustrated in a few representative texts. Especial attention is given to the relations between early and modern grammatical forms. Professor Hopkins.

29.—HISTORY OF THE LITERATURE AND THE TEACHING OF RHETORIC IN ENGLISH. One hour, 1st term, Friday, at 9. Lec-

tures, library reading, and the preparation of a thesis. Associate Professor O'Leary.

30.—MODERN ENGLISH GRAMMAR, for teachers. Two hours, 2d term, Tuesday and Thursday, at 10:15. Open only to qualified applicants, after consultation with the instructor. Professor Dunlap.

ENGLISH LITERATURE.

Professor DUNLAP.
 Professor HOPKINS.
 Associate Professor WHITCOMB.
 Associate Professor O'LEARY.
 Assistant Professor RAYMOND.
 Assistant Professor LYNN.
 Assistant Professor BRYANT.
 Assistant Professor GRAY.
 Mr. MOORE.
 ———, Fellow.

EQUIPMENT.—The department of English literature is well supplied with maps and with a large number of portraits. The library has 5174 volumes upon English literature. There are 810 volumes in the Shakspeare alcove. The department also possesses the Chaucer Society publications, the Spenser Society, the Shakspeare Society, the New Shakspeare Society, the Shakspeare Jahrbuch, *facsimiles* of the quartos, *facsimiles* of the folios of Shakspeare, the Shelley Society, and the Browning Society. The seminary room is large and commodious, and is well adapted for study and investigation.

ADVICE AS TO CHOICE OF COURSES.—The courses in English literature are designed to meet the needs of various classes of students. There are courses for the general student, for the student of literary history, for the student of journalism, for the student who intends to do graduate work in English literature, and for the student who intends to teach English literature. The instructors invite conference with students, and will assist in planning work to meet special cases. For further notes, see under "English Language," page 132, preceding.

FOR UNDERGRADUATES ONLY.

1.—ENGLISH LITERATURE. Three hours, 1st term, Monday, Wednesday, and Friday, at 8, 9, 10:15, 11:15, 2:30, and 3:30. General history, supplemented with class study of representative authors and with required library reading. Text-books, Simonds's English Literature and Manly's English Poetry (1170-1892). Open to all students of the College. Assistant Professors Lynn, Bryant, Gray, and instructors.

2.—ENGLISH LITERATURE. Two hours, 2d term, Tuesday and Thursday, at 8, 9, 10:15, 11:15, 2:30, and 3:30. A continuation of course 1. Assistant Professors Lynn, Bryant, Gray, and instructors.

3.—ENGLISH LITERATURE OF THE EIGHTEENTH CENTURY. Five hours, given both terms: 1st term, daily, at 11:15 and 2:30; 2d term, daily, at 8 and 2:30. A study of the period 1660-1780. Gosse's History of Eighteenth Century Literature will be used as a text-book, supplemented by lectures, by use of Manly's English Poetry (1170-1892) in the classroom, and by considerable library reading. The preparation of a thesis is required, with reports on collateral library work. Open to all students of the College who have had courses 1 and 2 in English literature and courses 1 and 2 in English language. Associate Professor Whitcomb and Assistant Professors Lynn and Gray.

FOR ADVANCED UNDERGRADUATES AND GRADUATES.

4.—AMERICAN LITERATURE. Three hours, 1st term, Monday, Wednesday, and Friday, at 1:30. General history, with special reference to the work of the chief American poets. Lecture and library course, with class study of representative selections. Professor Hopkins.

5.—AMERICAN LITERATURE. Three hours, 2d term, Monday, Wednesday, and Friday, at 1:30. Study of later writers and of current literature, with special reference to fiction. Lecture and conference course, with required readings and reports. Professor Hopkins.

6.—CHAUCER. Two hours, 1st term, Tuesday and Thursday, at 9. Lectures upon Middle English grammar and upon the life and times of Chaucer. Neither Old nor Middle English required for entrance. Careful reading of the Prologue, Knightes Tale, and the Nonne Preestes Tale. Rapid reading of a large part of the Canterbury Tales. Preparation of two theses. Professor Dunlap.

7.—ENGLISH LITERATURE OF THE ELIZABETHAN PERIOD, with special reference to Spenser. Two hours, 1st term, Tuesday and Thursday. Preparation of two theses. (Not given in 1908-'09.) Professor Dunlap.

8.—SHAKSPERE. Three hours, 1st term, Monday, Wednesday, and Friday, at 10:15. Lectures upon the life and times of Shakspere. Study and interpretation of three plays, with special attention to literary form, plot construction, character study, and

Elizabethan grammar. Two hours of library work required daily and preparation of two theses. Professor Dunlap.

9.—SHAKSPERE. Three hours, 2d term, Monday, Wednesday, and Friday, at 10:15. Lectures upon the life and times of Shakspeare. Study and interpretation of three plays, with special attention to literary form, plot construction, character study, and Elizabethan grammar. Two hours of library work required daily and preparation of two theses. Associate Professor O'Leary.

10.—ENGLISH LITERATURE OF THE SEVENTEENTH CENTURY, the age of Milton and Jeremy Taylor. Two hours, 1st term, Tuesday and Thursday, at 9. Study of the growth of thought and the development of various types of English literature. Two theses. Assistant Professor Raymond.

11.—ENGLISH LITERATURE OF THE SEVENTEENTH CENTURY. Two hours, 2d term, Tuesday and Thursday, at 10:15. Continuation of course 10. Assistant Professor Raymond.

12.—HISTORY OF PERIODICAL LITERATURE. Two hours, 2d term, Tuesday and Thursday, at 11:15. A study of journalism as representing popular opinion in the development of literary ideas. Study of individual writers as influenced by popular criticism, and lectures on the history of journalistic opinion. Assistant Professor Raymond.

13.—ENGLISH PROSE OF THE EIGHTEENTH CENTURY. Three hours, 1st term, Monday, Wednesday, and Friday, at 10:15. The authors studied will be Swift, Addison, Johnson, Goldsmith, and Burke. Lectures, library work, and the preparation of theses. Associate Professor O'Leary.

14.—THE ENGLISH ESSAY. Two hours, 2d term, Tuesday and Thursday, at 9. A study, historical and critical, of the essay as a literary form, from Bacon to the present time. Lectures, theses, and library work. Associate Professor O'Leary.

15.—ENGLISH LITERATURE OF THE NINETEENTH CENTURY. Three hours, 1st term, Monday, Wednesday, and Friday, at 11:15. Prose, exclusive of the novel. Biographical and critical lectures. The essay. Criticism. History. The authors studied are Lamb, Hazlitt, De Quincey, Landor, Newman, Arnold, Carlyle, Macaulay, Ruskin, Pater, and Stevenson. Two hours of library work daily and preparation of two theses. Professor Dunlap.

16.—ENGLISH LITERATURE OF THE NINETEENTH CENTURY.

Three hours, 2d term, Monday, Wednesday, and Friday, at 9. Poetry. Biographical and critical lectures. The authors studied are Wordsworth, Coleridge, Southey, Byron, Arnold, Tennyson, and Browning. Two hours of library work daily and preparation of two theses. Professor Dunlap.

17.—VICTORIAN LITERATURE, exclusive of the novel and Tennyson and Browning. Two hours, 1st term, Tuesday and Thursday, at 10:15. Professor Dunlap.

18.—THE MODERN ENGLISH LYRIC. Two or three hours, 1st term, Tuesday and Thursday, at 1:30 (and a third hour). A review of the main tendencies in English lyrical poetry from Skelton to Swinburne, with more intensive study of some selected period or school. Considerable attention will be given to the general technic and theory of the lyric. Associate Professor Whitcomb.

19.—THE ENGLISH NOVEL. Three hours, 2d term, Monday, Wednesday, and Friday, at 11:15. An historical and critical survey of the English novel, from Defoe to Meredith. Lectures on the growth and development of the novel. Study of selected typical novels, illustrative of important phases of fiction. Two hours of library work daily and preparation of two theses. Professor Dunlap.

20.—BROWNING. Three hours, 2d term, Monday, Wednesday, and Friday, at 9. Lectures upon the life and literary period of Browning, with general view of more important works. Interpretative study of shorter poems and two or three of the plays. Two theses required. Assistant Professor Lynn.

21.—TENNYSON. Three hours, 2d term, Monday, Wednesday, and Friday. General view of Tennyson and his relation to his period. Detailed study of representative works. One thesis required. (Not given in 1908-'09.) Assistant Professor Lynn.

22.—SHELLEY. Two hours, 2d term, Tuesday and Thursday, at 11:15. Lectures, and interpretation of selected poems of Shelley. Professor Dunlap.

23.—EPIC POETRY. Three hours, 1st term, Monday, Wednesday, and Friday, at 3:30. General view of the nature and history of epic poetry, with a comparative study of representative poems. Associate Professor Whitcomb.

24.—THE ENGLISH DRAMA, exclusive of Shakspeare. Two or three hours, 1st term, Tuesday and Thursday, at 3:30 (and a third hour). General history of the English drama from the

liturgical plays to the present time. More detailed study of a selected period. Associate Professor Whitcomb.

25.—ENGLISH LITERATURE AS INFLUENCED BY OTHER LITERATURES. Three hours, 2d term, Monday, Wednesday, and Friday. A general survey of the subject, including the history of translation into English, with more detailed study of some special period or type of literature. (Not given in 1908-'09.) Associate Professor Whitcomb.

ENGINEERING—CIVIL.

Dean MARVIN.

Associate Professor HOAD.

Associate Professor H. A. RICE.

Associate Professor DALTON.

Assistant Professor HUBBARD.

Assistant Professor NEWTON.

For equipment, see under School of Engineering.

Courses 8 to 15, inclusive, are open to Juniors and Seniors in the College. Courses 11 to 15, inclusive, are open to candidates for the master's degree, when accompanied by such extra work as may be required by the instructor. Courses 16 to 22, inclusive, are open only to candidates for the master's degree.

FOR UNDERGRADUATES.

5.—SURVEYING. Five hours, 2d term, daily, at 11:15. Engineer's instruments, their construction and adjustment. Methods of making and platting land, topographic, mining and hydrographic surveys. Sources of error and the means of controlling the precision of field-work. Leveling and earthwork. Freshman and Sophomore optional. Open to students of the College who have had plane trigonometry. Associate Professor Dalton and Assistant Professor Hubbard.

11.—RAILWAY SURVEYING. Five hours, 1st term, daily, at 10:15. A study of the methods of laying out and constructing railways. The setting out of simple and compound curves and calculation of excavation and embankment. Yards, turnouts, and switches. Easement curves of various types. Calculation of waterways, and methods of staking out foundations for culverts and bridges. This course must be preceded by a general course in surveying. Field-practice one-half day per week. Associate Professor Dalton.

12.—SANITARY ENGINEERING. Daily, 1st half of 1st term, at 11:15. Two and one-half credit hours. The collection, removal and disposal of sewage by various methods. Water-carriage and

pneumatic systems. Separate and combined systems. The construction of sewers, outfalls, manholes, and flushing appliances. Ventilation of sewers. Treatment of sewage. The collection and disposal of garbage and other refuse. Garbage destruction and utilization. Street cleaning. Associate Professor Hoad.

13.—SANITARY ENGINEERING. Daily, 2d half of 1st term, at 11:15. Two and one-half credit hours. Water-supply. The requisites of a supply as to quality and quantity. The value of chemical and biological analyses and the interpretation of results. Relation of water-supply to the public health. Rainfall and the gathering and storage of surface-water. The collection of ground-water. The use of rivers and lakes as sources of supply. Distributing systems; conduits and pipe-lines, pumping machinery, the flow of water in open channels and closed conduits. The construction of dams and reservoirs. The purification of water. Methods of maintaining the efficiency of existing plants. Associate Professor Hoad.

14.—ROOFS AND BRIDGES. 1st term, five hours, daily, 1:30 to 3:30. Analytical and graphical calculation of stresses in framed structures under various forms of loading. This course must be preceded by courses 1 and 2 in mechanics. Associate Professor H. A. Rice.

15.—BRIDGE DESIGNING. Five hours, 2d term, daily, 1:30 to 3:30. A study of bridge details and the dimensions of parts. Students work out designs for a plate girder and a simple truss. Must be preceded by course 14. Associate Professor H. A. Rice.

FOR GRADUATES ONLY.

16.—STRUCTURAL DESIGNING. Five credit hours, 1st or 2d term, daily. An advanced course covering cantilever, swing and suspension bridges, skeleton frames for buildings, train-shed roofs, stand-pipes, and elevated tanks. This course is designed to follow course 15. Lectures, recitations, and detail designing in the drawing-room. Associate Professor H. A. Rice.

17.—ENGINEERING MATERIALS. Five hours, 1st term, daily. An advanced course, which must be preceded by courses 1 and 2 in mechanics. It covers the methods of manufacture of structural materials and the different means and machines used in testing their qualities. The materials considered are cast iron, wrought iron, steel, brick, stone, cements, concrete, and timber. Opportunity will be given for specialization along some par-

ticular line, if desired, and considerable experimental work may be done in the testing laboratory. Recitations, lectures, library and laboratory work. Dean Marvin.

18.—SANITARY ENGINEERING. Five hours, 2d term, daily. An advanced course, to follow courses 12 and 13. The public health. Contagious diseases and methods for destroying them. Bacteriological methods as applied to sanitary work. Influence of sanitary works on public health. Advanced work on sewerage and water-supply. Lectures, recitations, and reading. Associate Professor Hoad.

19.—GEODESY. Five hours, 2d term, daily. Method of making geodetic surveys. Station signals and their location. The measurement of angles and laying out of base lines. Determination of latitude, longitude, time, and azimuth. Instrumental constants and sources of error. Leveling by vertical angles. Precise leveling. Figure of the earth. A knowledge of surveying and calculus is necessary for this course. Dean Marvin.

20.—RESEARCH COURSE. A course of investigation of some matter directly related to civil engineering. This course should run through the year, making a ten hours' credit. Arrangements for the course should be made with Dean Marvin.

21.—REINFORCED CONCRETE. Five hours, 2d term, daily. Associate Professor H. A. Rice.

22.—MAINTENANCE OF WAY. Five hours, 2d term, daily. An advanced course in railway engineering. Associate Professor Dalton.

ENGINEERING—MECHANICS.

Associate Professor H. A. RICE.
Assistant Professor HOOD.
Assistant Professor HUBBARD.
Assistant Professor CORP.

For equipment, see under School of Engineering.

Courses 1 to 5 are open to Juniors and Seniors. When accompanied by such extra work as may be required by the instructor, they are also open to candidates for the master's degree.

1.—MECHANICS. Five hours, 1st term, daily, at 8 or 9. A study of the laws of statics and dynamics. Action of forces upon bodies and the resulting motions. Prerequisite, calculus. Associate Professor H. A. Rice and Assistant Professor Hubbard.

2.—STRENGTH OF MATERIALS. Four hours, 2d term, daily, at

8 or 10:15. The theory of resistance to stress and applications to engineering construction. To be preceded by course 1. Associate Professor H. A. Rice.

3.—TESTING OF MATERIALS. Two credit hours, 2d term, Monday, Tuesday, Thursday, Friday or Saturday. A laboratory course to accompany course 2. The testing of iron, steel, wood and other materials of construction for resistance to tension, compression, torsion, bending, and shearing. Experimental determination of the limits of safe loading. The testing of paving brick. Assistant Professor Corp and Assistant Professor Hood.

4.—HYDRAULICS. Daily, 1st half of 1st term, at 10:15. Two credit hours. A study of the laws governing the pressure and flow of liquids and gases and the force of and resistance to their motion. Assistant Professor Hubbard.

5.—HYDRAULIC LABORATORY. One credit hour, 1st term, Monday, Wednesday, or Friday, 3:30 to 5:30. A course to accompany course 4 and the course in hydraulic machinery. Experimental work with the flow of water over weirs, through orifices and pipes, and in testing hydraulic machinery. Assistant Professor Corp.

ENGINEERING—ELECTRICAL.

Professor ———.

Associate Professor M. E. RICE.

Assistant Professor FREEMAN.

Assistant Professor STIMPSON.

Mr. MCCOLLUM, Instructor.

For equipment, see under School of Engineering.

Courses 1, 2 and 5 are open to Juniors and Seniors who have had the necessary preparation.

FOR UNDERGRADUATES ONLY.

1.—DYNAMO MACHINERY. Theory of direct-current generators and motors. Prerequisites, physics 3 and 4. Three hours, 1st term, Monday, Wednesday, and Thursday, at 10:20. Mr. McCollum.

2.—THEORY OF ALTERNATING CURRENTS. A mathematical treatment of alternating-current phenomena and the theory of alternate-current machines, fundamental types. Prerequisite, course 1. Five hours, 2d term, daily, at 11:20. Assistant Professor Freeman.

Students taking course 1 should take at the same time at least a two-hour credit in Physics 8. Students taking course 2 should take at the same time at least a two-hour credit in course 5.

5.—ELECTRICAL LABORATORY. A continuation of physics 8 and coördinate with course 2 above. Prerequisite, course 1. Two or four hours credit, 2d term, four or eight hours in the laboratory, by appointment. Mr. McCollum.

ENGINEERING—MECHANICAL.

Professor WALKER.
Assistant Professor CORP.
Assistant Professor ———.

For equipment, see under School of Engineering.

Courses 10 and 11 are open to Juniors and Seniors in the College. Courses 2 to 13, inclusive, are open to candidates for the master's degree when accompanied by such extra work as may be required by the instructor. Courses 2, 7, 9, 10 and 11 are recommended as giving the mathematical treatment of the various branches of general mechanical engineering. Courses 18 to 20 are open only to graduates who have taken the equivalent of the regular undergraduate courses in either mechanical or electrical engineering.

FOR ADVANCED UNDERGRADUATES AND GRADUATES.

7.—STEAM MACHINERY. Five hours, 2d term, at 11:15. A classroom course designed for those who do not plan to go further into the subject. It includes an elementary course in thermodynamics and a study of modern types of steam-power generators. Must be preceded by physics 1, 2, 3, 4, or physics 7, and by mathematics 5. Assistant Professor Corp.

9.—THE GAS-ENGINE. Two hours, 1st term, Tuesday and Thursday, at 9. Power, efficiency and economy of the gas-engine; study of the forces produced by gas pressure and inertia; structural design. Text, Lucke's Gas Engine Design. Must be preceded by mechanics 1 and 2, and by either 7 or 11. Professor Walker.

10.—HYDRAULIC MACHINERY. Two credit hours, 1st term, (b), at 10:15. A study of types of pumping machinery, with special reference to city water-supply, sewerage, and irrigation plants. The questions of first cost and maintenance of plant and economy in operation are fully discussed. Also a study of water-power development and methods of designing turbine water-wheels. Lectures, assigned reading, and reports. Must be preceded by mechanics 4. Professor Walker.

11.—THERMODYNAMICS. Four hours, 1st term, at 11:15. A thorough study of the laws of gases and vapors, and of the meth-

ods of converting heat into mechanical energy. The temperature-entropy method of analysis is followed, and applications made to ideal steam- and gas-engines. Text, Reeves's Thermodynamics. Must be preceded by physics 1, 2, 3, 4, or physics 7, by mathematics 5 and 7, and mechanics 1. Professor Walker.

OPEN TO GRADUATES IN MECHANICAL AND ELECTRICAL
ENGINEERING.

12.—ADVANCED STEAM ENGINEERING. Four hours, 2d term, Tuesday and Thursday, 8 to 10. Study of heat losses in the steam-engine, with methods of reducing same; compounding; superheating; jacketing; designing of reciprocating engines; principles of operation and design of air-compressors and refrigerating machinery; the steam jet; form of nozzle for adiabatic jets; and design of the steam-turbine. Recitations and lectures. Texts, Thomas's Steam Turbine, Reeves's Thermodynamics, and Kent's Mechanical Engineer's Handbook. Must be preceded by 11. Professor Walker.

18.—ADVANCED LABORATORY. Two and one-half or five hours, both terms, as assigned. Research work on special subjects. Professor Walker.

19.—ADVANCED DESIGNING. Two to four hours, both terms. Preparation of complete plans for some special machine or plant for power development or manufacturing. Professor Walker.

20.—LIBRARY WORK. Two hours, both terms. Assigned reading and reports; indexing engineering literature; preparation of bibliography. Professor Walker.

ENTOMOLOGY.

Professor HUNTER.
Assistant Professor GLENN.

EQUIPMENT.—The main laboratory is arranged for introductory courses and research courses. It is equipped with both compound and dissecting microscopes, and such accessory apparatus as is required by the students. It contains, in addition to the equipment of microscopes, special apparatus such as meets the individual requirements of students doing advanced work. There are also two experimental laboratories specially fitted for study of biological phenomena in insect life. In addition to the collection of books here shelved, there are important foreign and English periodicals, as well as monographs and other separata. The extensive collections, both biologic and systematic, offer un-

usual facilities for comprehensive instruction in the various groups. A more extended notice of these collections will be found under the head of "Museums." (See index.) A large series of cabinets has been especially arranged to aid in teaching. These are supplemented by models illustrating developmental processes. The material for study and apparatus at hand afford exceptional opportunities for research work.

ADVICE AS TO CHOICE OF COURSES.—The following courses are designed to meet the needs of two classes of students, viz.:

(1) Those who in general education desire some knowledge of the subject-matter and general principles of animal biology, as illustrated by this division of the animal kingdom. For this class, courses 1 to 4, inclusive, are adapted.

(2) Those preparing to become teachers and investigators engaged in research work. After completing the fundamental courses, 1 to 4, inclusive, the aims of each student will largely determine the selection of advanced courses. The requirements for those expecting to teach entomology in secondary schools are courses 1 to 4, inclusive, and course 7.

FOR ADVANCED UNDERGRADUATES AND GRADUATES.

1.—INTRODUCTORY ENTOMOLOGY. Three hours, 1st term, Monday, Wednesday, and Friday, 1:30 to 3:30. This course includes a general survey of the morphology, distribution, classification and behavior of the orders of insects. The work in the laboratory consists of an anatomical study of one or more types, followed by a comparison of each type studied with closely allied forms. A series of lectures accompany the laboratory work. Open to Seniors and Juniors of the College who have had zoölogy 1. Professor Hunter and Mr. Glenn.

2.—INTRODUCTORY ENTOMOLOGY. A continuation of course 1. 2d term, Monday, Wednesday, and Friday, 1:30 to 3:30. Professor Hunter and Mr. Glenn.

3.—SYSTEMATIC ENTOMOLOGY I. Two hours, 1st term, Tuesday and Thursday, 1:30 to 3:30. This course gives special prominence to the systematic position of the orders studied. The laboratory work consists of (a) determination of species; (b) careful morphological study of organs, with special reference to their evolution; (c) when possible, an extended study of the species of one or more families. In addition to the text, monographs and current literature of special groups will be used.

Open to Juniors and Seniors of the College who have had zoölogy 1. Mr. Glenn.

4.—SYSTEMATIC ENTOMOLOGY II. Two hours, 2d term, Tuesday and Thursday, 1:30 to 3:30. A continuation of the work of course 3. Mr. Glenn.

5.—MORPHOLOGY. A continuation of course 2. Conducted in more advanced manner. Students are required to review a piece of well-executed morphological work, with a view of leading up to original research on problems to be assigned. Throughout the year, by appointment. Professor Hunter.

6.—TAXONOMY. A continuation of course 4, enabling the student to undertake the serious study of some one family. At present work in this course is confined to the *Hemiptera*, and already serious studies upon several families in this order have been published. Throughout the year, by appointment. Professor Hunter.

7.—ECOLOGY. Three hours, 1st term, Monday, Wednesday, and Friday, at 10:15. Lectures, readings and field-work on the behavior of insects and their relation to their environments. Open to Juniors and Seniors who have had 1 or 3. Professor Hunter.

8.—APPLIED ENTOMOLOGY. Two hours, 1st term, Tuesday and Thursday, at 10:15. Lectures, readings and observations in field on forms of economic value; the beneficial—their habits, life-histories; the injurious—their habits, life-histories, and modes of dealing with such forms. The economic status of the class Insecta. Open to Juniors and Seniors who have had 1 or 3. Mr. Glenn.

9.—TEACHERS' COURSE. Three hours, 2d term, 3:30 to 5:30. Laboratory course, adapted to those who expect to teach. Lectures upon life-histories, insect relationships, choice of materials, and modes of presentation. Field-work on habits of social insects. Illustrative cabinets, their preparation and use. Open to Juniors and Seniors who have had zoölogy 1. Professor Hunter and Mr. Glenn.

10.—SEMINARY. One hour, by appointment, throughout the year. Designed for discussion of special subjects and reports upon the more notable current advances in this branch of science. Open to students far enough advanced to do the work.

FOR GRADUATES ONLY.

11.—ORIGINAL INVESTIGATION. Throughout the year, by appointment. Research work in parthenogenesis. Professor Hunter.

12.—ORIGINAL INVESTIGATION. By appointment, throughout the year, including the summer months. Taxonomy, Insecta. Critical study of Kansas fauna. This course has for its object a survey of the species found in the state and is conducted in connection with the State Entomological Commission. Professor Hunter.

13.—MORPHOLOGICAL DEVELOPMENT. Problems assigned with reference to the attainments of individual students. Throughout the year, by appointment. Professor Hunter.

ORGANIC EVOLUTION.

Professor SNOW.

FOR ADVANCED UNDERGRADUATES AND GRADUATES.

1.—THE PRINCIPLES OF EVOLUTION. Lectures and readings. Three hours, 1st term, Monday, Wednesday, and Friday, at 10:15. This course includes a history of the doctrine of evolution and a consideration of the facts which support the doctrine. These facts include the relation of the extinct forms of past ages to the present, the series of embryological changes in the higher animals, the fertilization of flowers by insects, and the geographical distribution of plants and animals. The obsolete theory of spontaneous generation receives attention. Professor Snow.

2.—PRINCIPLES OF EVOLUTION. Four hours, 1st half of 2d term, Tuesday, Wednesday, Thursday, and Friday, at 10:15. This course is a continuation of course 1, and includes a discussion of the various theories which have been proposed to account for evolution; the comparative influence of environment and heredity, the origin of the races of mankind, the origin of human intellect and conscience, and the relation of the law of evolution to the other great laws of the natural and spiritual world. These two courses are illustrated by occasional stereopticon exhibits. Professor Snow.

FRENCH.

(See Romance Languages and Literatures.)

GEOLOGY AND MINERALOGY.

Professor HAWORTH.

Assistant Professor TODD.

EQUIPMENT.—The library is of first importance for equipment in geology, and apparatus and museums next. The library includes practically all the reports of public surveys in America, both national and state, and all the leading text-books and special treatises by the leading authorities of the world. Of particular importance is the large number of topographic sheets and folios of the final mapping of the United States Geological Survey. The geological and mineralogical museums are described elsewhere in this catalogue, to which the reader is referred. Large numbers of maps and papier-mache models of geological and topographic land forms, especially chosen from those now on the market, add greatly to the equipment for good, effective work.

ADVICE AS TO CHOICE OF COURSES.—*Geology.* The following courses in geology are designed to meet the requirements of two classes of students: those wishing to become working geologists, and those wishing only a general outline of the subject as a part of a liberal education. In the former case the student is advised to take all the courses offered, as nearly as possible in the order given, or possibly 4 and 5 might be brought in at any time after 1. Should the student desire to give only a limited time to the study, he should begin with 1, after which he may take 2, 3, or 4 and 5, in any order, with 4 and 5 most desirable for those who take only a single year's course. Course 1 is open to all students of the College excepting Freshmen. Courses 1 to 8, inclusive, are open to Juniors and Seniors in the College. Courses 2 to 8, inclusive, are open to graduate students who have not already taken them.

Mineralogy. Students wishing to specialize in mineralogy should take courses 1, 2 and 6, in the order given; those wishing to specialize in petrography should take courses 1, 3, 4, 5, and 7, in the order given. Should the student desire to give only a limited time to the subjects of mineralogy and petrography, courses 1, 3 and 4 should be chosen. Course 1 is required of all mining and chemical engineering Sophomores, and is open to all Juniors and Seniors of the College who have had qualitative analysis. Courses 2 to 4, inclusive, are open to all students who have completed course 1. Course 5 is open to all students who have had geology 1 and mineralogy 1. Course 6 is open to graduate students only who have completed courses 1 and 2.

Course 7 is open to graduate students only who have completed courses 1, 3, and 4.

Geology.

FOR UNDERGRADUATES.

1.—ELEMENTARY GEOLOGY. Five hours, each term, daily, at 11:15. A study of the elementary principles of geology, including the characteristics and arrangement of rocks, the forces active in shaping the earth, and a history of the development of the earth and its inhabitants. An acquaintance with the elements of chemistry, zoölogy and botany will be of advantage in this course. Professors Haworth and Todd.

2.—AREAL GEOLOGY I. Two hours, 1st term, Tuesdays and Thursdays, at 10:15. This is a continuation of course 1, with special reference to the stratigraphy of land areas, continental development, the history of animal and plant life, and the uses of fossil forms in the identification and correlation of geologic horizons. Special attention will be given to field methods of geological investigation and to the construction of maps and sections for geologic reports. Lectures, laboratory and library work. This course must be preceded by course 1 or its equivalent. Professor Todd.

3.—AREAL GEOLOGY II. Three hours, 2d term, Monday, Wednesday, and Friday, at 10:15. A continuation of course 2. Professor Todd.

4.—ECONOMIC GEOLOGY I. Three hours, 1st term, Monday, Wednesday, and Friday, at 9. A general study of the metallic products of the mine, quarry, considered from a scientific and a practical standpoint, including the nature, origin, amount and geographic and geologic distribution of the same. Must be preceded by elementary chemistry and geology 1 or mineralogy 1. Lectures and library work. Professor Haworth.

5.—ECONOMIC GEOLOGY II. Two hours, 2d term, Tuesday and Thursday, at 10:15. Non-metallic products. A continuation of course 4. Professor Haworth.

6.—PHYSIOGRAPHY. Three hours, 2d term, Monday, Wednesday, and Friday, at 9. A study of the general principles of physiography, with detailed studies of specific areas in latter parts of course, including earth movements, general elevation and depression of land areas, rock disintegration, origin and nature of drainage systems and the life-history of rivers, and origin of surface features and causes which have produced them.

Must be preceded by geology 1. Lectures and library work. Professor Haworth.

7.—DYNAMIC GEOLOGY I. Two hours, 1st term, Tuesday and Thursday, by appointment. A brief course on the elementary principles of dynamic geology, to follow course 1 or course 2. It will include a study of continental development, mountain areas, mountain structure, mountain origin, and kindred subjects. Lectures, library and laboratory work. Professor Haworth.

8.—DYNAMIC GEOLOGY II. Three hours, 2d term, Tuesday and Thursday. A continuation of course 7. Professor Haworth.

9.—INVERTEBRATE PALEONTOLOGY I. Five hours, 1st term, daily, 1:30 to 3:30. After a consideration of the elements of paleontology, most of the time will be spent upon the mollusks and echinoderms of Mesozoic and Cenozoic times. Lectures and laboratory work. Geology 1 and zoölogy 1 are prerequisite, and zoölogy 2 very desirable. Professor Todd.

10.—INVERTEBRATE PALEONTOLOGY II. Five hours, 2d term, 1:30 to 3:30. Similar work to the previous course, except that special attention is given to mollusks, echinoderms and brachiopods of the Paleozoic. Professor Todd.

ADVANCED COURSES FOR GRADUATES.

11.—DYNAMIC GEOLOGY. Graduate students in geology will be provided with opportunity to pursue the study of dynamic geology to any extent desirable, dependent upon the previous training of the student and the object in view. The work may be continued through one or more years, and may be made a major or minor subject for the degree of master of arts or doctor of philosophy. By appointment. Professor Haworth.

12.—PHYSIOGRAPHY. Opportunity is offered graduate students to pursue the study of physiography for one or more years, dependent upon the previous training and end in view. It may be elected either as a major or minor for the degree of master of arts or doctor of philosophy. By appointment. Professor Haworth.

13.—ECONOMIC GEOLOGY. Opportunity is offered graduate students to pursue the study of the subject throughout the year for one or more years, and to choose it as a major or minor subject for the degree of master of arts or doctor of philosophy. By appointment. Professor Haworth.

Students electing either of the above courses as a major for the degree of doctor of philosophy must devote at least half their time to it for

three years, and must present a dissertation embodying the results of original work done in connection therewith, in accordance with the general conditions governing the granting of this degree by this University and with the requirements of the department of geology.

12.—SUMMER FIELD-WORK. Opportunity is offered advanced students in geology, either graduate or undergraduate, to do field-work in geology in connection with the University Geological Survey of Kansas, under the guidance of the department of geology, for which credit will be given the same as for work done in the classroom and laboratory. By appointment. Professor Haworth.

Mineralogy.

FOR UNDERGRADUATES.

1.—ELEMENTARY MINERALOGY I. Five hours, 2d term, daily, 3:30 to 5:30. A brief course in crystallography, blowpipe analysis, and systematic mineralogy, consisting of lectures and laboratory work, as follows: *Crystallography*.—A study of the properties of crystals and the crystal systems, with laboratory exercises, using natural crystals and crystal models. Considerable work is required in drawing crystal forms and measuring crystal angles. Moses and Parsons' Text-book on Mineralogy will be used. *Chemical Mineralogy*.—In blowpipe analysis sufficient practice is required to familiarize the student with all the ordinary blowpipe tests for mineral identifications. *Physical Mineralogy*.—The student is required to become thoroughly familiar with the methods of identifying all the more common minerals by their physical characters, such as crystalline form, cleavage, gravity, luster, streak, hardness, and color. The uses, localities and productions of the minerals of economic importance are discussed. Required of Sophomore mining engineers and open to Juniors and Seniors who have had qualitative analysis. It may also be taken for graduate credit, provided some extra time is given to it. Assistant Professor Todd.

FOR ADVANCED UNDERGRADUATES AND GRADUATES.

2.—SYSTEMATIC MINERALOGY. Five hours, 1st term, daily, by appointment. This course is a continuation of mineralogy I, including an extended study of mathematical and physical crystallography, including optical properties, crystal measurements with reflection goniometers, crystal projection, and study of the most approved classification of minerals. Open to all students who have had mineralogy I. Assistant Professor Todd.

3.—PETROGRAPHY. Three hours, 1st term, Monday, Wednesday, and Friday, by appointment. This course includes a study

of the mineralogical and chemical composition of rocks, their origin, structural features, and classification. The laboratory equipment for this course consists of carefully selected collections representing all the principal rock-making minerals, rock families, and rock types, together with several hundred thin sections for study with the petrographical microscope. The most recent field classification of rocks, Rosenbuch's classification and the quantitative classification are discussed. Open to all students who have had mineralogy I. Professor Haworth.

4.—PETROGRAPHY. Three hours, 2d term, by appointment. A continuation of course 3. Professor Haworth.

5.—VOLCANISM AND METAMORPHISM I. Three hours, 2d term, by appointment. (1) Volcanoes and volcanic phenomena, with a discussion of the theories concerning them. (2) Principles of metamorphism and metamorphic rocks. The forces, agents and general processes of metamorphism; the classification and description of the metamorphic sedimentary and the metamorphic igneous rocks. Van Hise's Treatise on Metamorphism will be used as a text. Open to all students who have had geology I and mineralogy I. Professor Haworth.

FOR GRADUATES ONLY.

6.—ADVANCED WORK AND ORIGINAL WORK IN MINERALOGY. Three, five or ten hours, throughout the year, by appointment. This course may be chosen by graduate students who have completed courses 1 and 2 and who wish to specialize in the subject of mineralogy. Professor Haworth and Assistant Professor Todd.

7.—ADVANCED WORK AND ORIGINAL WORK IN PETROGRAPHY. Three, five or ten hours, throughout the year, by appointment. This course may be chosen by graduate students who have completed courses 3, 4 and 5 and who wish to specialize in the subject of petrography. Professor Haworth.

GERMANIC LANGUAGES AND LITERATURES.

Professor CARRUTH.
Associate Professor ENGEL.
Assistant Professor CORBIN.
Assistant Professor KRUSE.
Assistant Professor CAMPBELL.
Assistant Professor HOLST.
Mr. BRIGGS.
Miss PALMER, Fellow.

EQUIPMENT.—The German department has an excellent stereopticon and 800 stereopticon slides, illustrating scenery, cos-

tumes, and biography; a small number of excellent photographs and prints in frames; a complete set of twenty German wall-maps, showing the various separate states, and a few busts. The department has a Columbia graphophone and is accumulating a series of speech records for illustration of differing German pronunciation. There are 2653 volumes in the library of the German department, and five philological and seven literary journals are received.

There has also been purchased a valuable collection of 3000 unbound dissertations and school programs, covering all fields of Germanistic scholarship. With the present library and this acquisition of special studies, the German department is prepared to encourage graduate study at the University of Kansas in Germanic languages.

The Deutscher Verein owns a piano, which is used for accompanying the German songs of the verein.

ADVICE AS TO CHOICE OF COURSES.—Students who plan to become teachers of German in high schools and academies should consult with the head of the department before the close of the Sophomore year. An outlined course for the four College years will be found on the department bulletin-board, and is recommended to the careful attention of those concerned. Courses 1 to 11, inclusive, are open to all students of the College. Courses 12 to 19 are open to both undergraduates in the College and to graduate students. The full amount of Latin, 1, 2, 3, for entrance is required as preparation for German 1 and 2. Students who enter with a deficiency in Latin and wish to take German 1 may do so in a practice class, taught by an advanced student, or in the Lawrence high school, or with a private tutor.

FOR UNDERGRADUATES ONLY.

1.—OUTLINE OF GRAMMAR. Five hours, 1st term, at 8, 9, 10:15, 11:15, 1:30 to 3:30, 2:30; 2d term, at 1:30. The first nineteen lessons of Carruth's Otis's Grammar, with composition exercises; Carruth's Reader, about fifty pages. Professor Carruth, Associate Professor Engel, Assistant Professor Corbin, Assistant Professor Kruse, Assistant Professor Campbell, and Mr. Briggs.

With the afternoon division, from 1:30 to 3:30, the laboratory method is used, requiring two hours' classroom work and one hour preparation outside. It is open to students of the College only. The other divisions will be determined by convenience of hours alone. Practice classes in beginning German will be conducted at eight o'clock. To these a limited number of students who lack the requirement of entrance Latin will be admitted.

2.—GERMAN READER AND GRAMMAR, completed. Five hours, 1st term, at 2:30; 2d term, at 8, 9, 10:15, 11:15, and 2:30. Carruth's Reader, completed. Heyse's *Die Blinden* used as a basis for narrative and conversation, and Schiller's *Wilhelm Tell* (complete). Also special exercises in word order and auxiliary verbs, and sight-reading. Associate Professor Engel, Assistant Professor Corbin, Assistant Professor Kruse, Assistant Professor Campbell, and Mr. Briggs.

3.—GERMAN PROSE. Five hours, 1st term, at 8, 9, 10:15, 11:15, 2:30, and 3:30; 2d term, at 9, 2:30, and 3:30. Lessing's *Minna von Barnhelm*, Freytag's *Karl der Grosse*, etc. Preceded by review of grammar. Sight-reading. Associate Professor Engel, Assistant Professor Corbin, Assistant Professor Kruse, Assistant Professor Campbell, Assistant Professor Holst, and Mr. Briggs.

4.—SCHILLER'S *WALLENSTEIN*. Five hours, 2d term, at 8, 9, 10:15, 11:15, and 1:30; 1st term, at 10:15 and 3:30. Outline of German literature. Associate Professor Engel, Assistant Professor Corbin, Assistant Professor Kruse, Assistant Professor Campbell, Assistant Professor Holst, and Mr. Briggs.

5a.—GERMAN COMPOSITION. Required of all students for admission to subsequent courses. Three hours, 1st term, at 9 and 10:15; 2d term, at 9. Translation of connected English, Poll's or v. Jagemann's *German Prose Composition*, v. Jagemann's *German Syntax*, Fossler's *Practical German Conversation*. Associate Professor Engel, Assistant Professor Kruse, and Assistant Professor Holst.

5b.—GERMAN COMPOSITION. Two hours, 2d term, at 9 and 10:15. A continuation of course 5a, with special drill exercises in grammar and syntax and original compositions. Open to students who have had course 5a, and to others only by special permission of the instructor. Associate Professor Engel, Assistant Professor Kruse, and Assistant Professor Holst.

6.—LESSING'S PROSE. Two hours, 2d term, at 9. Reading of portions of the *Hamburgische Dramaturgie*. This course is designed especially for students who complete German 4 in the 1st term, and may be taken as a complement to composition 5a, 2d term. Other students may be admitted by special arrangement. Assistant Professor Campbell.

7.—SCHILLER'S *DIE BRAUT VON MESSINA*. Two hours, 1st term, Tuesday and Thursday, at 10:15. Professor Carruth and Associate Professor Engel.

8.—SCHILLER'S DRAMAS. Three hours, 2d term, at 10:15. Maria Stuart, Die Jungfrau von Orleans. Associate Professor Engel.

Courses 7 and 8 are designed primarily as complements to the courses in composition 5a, 1st term, and 5b, and may not be taken subsequently except by special arrangement.

9.—LESSING'S NATHAN DER WEISE. Three hours, 1st term, Monday, Wednesday, and Friday, at 11:15. Professor Carruth and Associate Professor Engel.

10.—GOETHE'S IPHIGENIE. Two hours, 1st term, Tuesday and Thursday, at 11:15. Professor Carruth and Assistant Professor Corbin.

11.—GOETHE'S FAUST (parts I and II). Three hours, 2d term, Monday, Wednesday, and Friday, at 11:15. Professor Carruth and Assistant Professor Corbin.

FOR ADVANCED UNDERGRADUATES AND GRADUATES.

12.—GERMAN LITERATURE. Five hours, 1st term, at 10:15. An outline history. Lectures, the class following Kluge and Scherer or Francke. Essays and criticisms by members of the class. Open only to students who have had thirty hours of the preceding courses or equivalent. Professor Carruth.

13.—GERMAN LITERATURE OF THE EIGHTEENTH CENTURY. Five hours, 2d term, at 10:15. Klopstock, Wieland, Lessing, Herder, Goethe, and Schiller. Reading the chief works, and reviews. (Not given in 1908-'09.) Professor Carruth.

14.—HISTORY OF GERMAN PROSE FICTION. Five hours, 2d term, at 10:15. Lectures on the history of the novel and on methods and schools in fiction. Hauff, Scheffel, Freytag, Keller. Careful reading of one work by each author; others outside. Theses on separate authors and on the whole course, by members of the class. Professor Carruth.

16.—THE LYRICS AND BALLADS OF GOETHE AND SCHILLER. Three hours, 1st term, Monday, Wednesday, and Friday, by appointment. Study of the lyrics and ballads in connection with the lives and literary development of the authors. Lectures on the nature of the lyric and ballad. Study of lyric forms. Students must satisfy the instructor as to their preparation for the course. Assistant Professor Corbin.

17.—THE ROMANTIC LYRIC. Continuation of 16. Two hours, 2d term, Tuesday and Thursday, by appointment. Lectures on the romantic school in general. Study of the principal lyric writers from Novalis to Heine. Assistant Professor Corbin

18.—THE REALISTIC DRAMA. Three hours, 1st term, by appointment. Hebbel, Ludwig, Anzengruber. Lectures, readings, and reports. Assistant Professor Kruse.

19.—THE NATURALISTIC DRAMA. Hauptmann, Sudermann. Lectures, readings, and reports. Two hours, 2d term, by appointment. Should be preceded by course 18. Assistant Professor Kruse.

Courses 20-25 are primarily for Graduates.

20.—HISTORY OF THE GERMAN LANGUAGE. Two hours, 1st term, Tuesday and Thursday, at 1:30. Introduction to philological study. Lectures and library work. Assistant Professor Holst.

21.—GOTHIC. Three hours, 1st term, Monday, Wednesday, and Friday, at 1:30. Phonetics, grammar, and translations. Assistant Professor Holst.

22.—OLD NORSE. Three hours, 2d term, Monday, Wednesday, and Friday, at 1:30. Noreen's Altnordische Grammatik; Brenner's Handbuch; Vigfusson and Powell's Reader. Assistant Professor Holst.

23.—MIDDLE HIGH GERMAN. Five hours, 2d term, by appointment. Paul's Mittelhochdeutsche Grammatik. Nibelungenlied. Hartmann, Der arme Heinrich. Selections from Walther von der Vogelweide. Lectures. Associate Professor Engel.

24.—LUTHER AND THE SIXTEENTH CENTURY. Three hours, 2d term, Monday, Wednesday, and Friday, by appointment. Reading and grammatical study of the German literature of the Reformation, preceded by an outline of historical German grammar. Professor Carruth.

25.—GERMANIC MYTHOLOGY. Two hours, 2d term, Tuesday and Thursday, at 1:30. Professor Carruth.

26.—MODERN NORWEGIAN. Two hours, 2d term, by appointment. Olsen's Grammar and Reader, and selected texts. Assistant Professor Holst.

27.—TEACHERS' COURSE. Five hours, 2d term. Advanced grammar, with theory and practice of language teaching. Intended especially for those who desire to fit themselves for teaching German in high schools. Open only to the best students of the department. Professor Carruth and Assistant Professor Corbin.

GREEK.

Professor WILCOX.

Associate Professor STERLING.

EQUIPMENT.—Twenty-nine casts of sculpture, five models, a relief-map, numerous wall-maps, 800 photographs, 500 plates (many colored), 55 illustrated folios, 2500 volumes in library, 15 current periodicals, 1800 stereopticon slides.

ADVICE AS TO CHOICE OF COURSES.—Those who aim to become teachers of Greek or Latin or any other language, or who take Greek for general culture or discipline, should take the courses in order from 1 to 18, and 27 and 28, or as many of them as they have not taken before entering the University, or have time to take. Students preparing for the ministry will find it best to follow the same plan, and take the course in New Testament Greek in addition, or in place of some course in classical Greek they might otherwise take. Students who aim simply at reading the New Testament in the original for their own pleasure or profit can accomplish that by taking courses 21 and 22. Students of science and English may get in course 19 a good working knowledge of the scientific and other English words that are derived from Greek; this course may also serve as an introduction to classical Greek, being followed by courses 20 and 4. Students of all literatures who can give no more time to Greek may get a very good idea of the content of Greek literature, and especially a valuable knowledge of mythology, from courses 23 and 24, or a partial knowledge from either of those courses. Those who desire an introduction to the architecture of all periods may get it in course 25; to the sculpture and painting of all periods, in course 26. A very rapid survey of the great arts of the Greek and Roman periods is made in course 27; of mediæval and modern times, in course 28. Greek students should take also the courses in Greek and Roman history, in the history of philosophy, and as many literary courses as possible.

FOR UNDERGRADUATES ONLY.

1.—ELEMENTARY GREEK. Five hours, 1st term, daily, at 9. Gleason's Greek Primer, or White's First Greek Book. Associate Professor Sterling.

2.—XENOPHON'S ANABASIS, or equivalent prose. Five hours, 2d term, daily, at 9. Associate Professor Sterling.

3.—HOMER'S ILIAD. Three hours, 1st term, Monday, Wednesday, and Friday, at 10:15. Professor Wilcox.

4.—THUCYDIDES (selections). Two hours, 1st term, Tuesday and Thursday, at 10:15. Professor Wilcox.

5.—HOMER'S ODYSSEY. Three hours, 2d term, Monday, Wednesday, and Friday, at 10:15. Professor Wilcox.

6.—HERODOTUS (selections). Two hours, 2d term, Tuesday and Thursday, at 10:15. Professor Wilcox.

7.—PLATO'S APOLOGY AND CRITO. Three hours, 1st term, Monday, Wednesday, and Friday, at 11:15. Associate Professor Sterling.

8.—SOPHOCLES. Two hours, 1st term, Tuesday and Thursday, at 11:15. Associate Professor Sterling.

9.—EURIPIDES AND ÆSCHYLUS. Three hours, 2d term, Monday, Wednesday, and Friday, at 10:15. Associate Professor Sterling.

10.—DEMOSTHENES (Philippics). Two hours, 2d term, Tuesday and Thursday, at 11:15. Associate Professor Sterling.

20.—ATTIC GREEK. Two hours, 2d term, Tuesday and Thursday, at 10:15. Stories, legends, and selections from prose authors. Continuation of 19. Associate Professor Sterling.

21.—ELEMENTARY NEW TESTAMENT GREEK. Three hours, 2d term, Monday, Wednesday, and Friday, at 10:15. Associate Professor Sterling.

22.—NEW TESTAMENT. Two hours, 1st term, Tuesday and Thursday, at 10:15. Reading of select passages in Westcott and Hort's text. Associate Professor Sterling.

27.—GREEK ART. One hour, 1st term, Tuesday, at 4:30. The essentials and fundamental principles of Greek architecture, sculpture, and painting. Illustrated lecture and two hours' outside reading. Professor Wilcox.

28.—GREEK ART IN RELATION TO LATER AND MODERN ART. One hour, 2d term, Tuesday, at 4:30. The essential and fundamental principles of Roman, mediæval and modern art, with especial reference to survivals and revivals of ancient art elements. Illustrated lecture and two hours' outside reading. Professor Wilcox.

FOR ADVANCED UNDERGRADUATES AND GRADUATES

11.—THE CLOUDS OF ARISTOPHANES AND MEMORABILIA OF XENOPHON. Three hours, 1st term, Monday, Wednesday, and Friday, at 9, or by appointment. (Not given in 1908-'09.) Professor Wilcox.

12.—THE GORGIAS OF PLATO. Two hours, 1st term, Tuesday and Thursday, at 9, or by appointment. (Not given in 1908-'09.) Professor Wilcox.

13.—GREEK HISTORY AND POLITICS. Three hours, 2d term, Monday, Wednesday, and Friday, at 9, or by appointment. Representative selections of Greek life and thought in Wilamowitz-Moellendorf's Reader. (Not given in 1908-'09.) Professor Wilcox.

14.—GREEK PHILOSOPHY, COSMOGONY, ETC. Two hours, 2d term, Tuesday and Thursday, at 9, or by appointment. Selections in Wilamowitz-Moellendorf's Reader on philosophy, cosmogony, astronomy, mathematics, medicine, esthetics, and grammar. (Not given in 1908-'09.) Professor Wilcox.

15.—GREEK LITERARY CRITICISM. Three hours, 1st term, Monday, Wednesday, and Friday, at 9, or by appointment. The Frogs of Aristophanes and Choephoroi of Æschylus, and Aristotle's Poetics. Professor Wilcox.

16.—LYRIC POETRY (elegiac and iambic). Two hours, 1st term, Tuesday and Thursday, at 9, or by appointment. Professor Wilcox.

17.—GREEK LITERARY CRITICISM. Two hours, 2d term, Tuesday and Thursday, at 9, or by appointment. The Electras of Sophocles and Euripides, and Aristotle's Poetics. Professor Wilcox.

18.—LYRIC POETRY (melic). Three hours, 2d term, Monday, Wednesday, and Friday, at 9, or by appointment. Alcæus, Sappho, Simonides, Pindar, and Bacchylides. Professor Wilcox.

19.—THE GREEK IN ENGLISH. Three hours, 1st term, Monday, Wednesday, and Friday, at 10:15. The elements of Greek with especial reference to English. The course may serve as an introduction to classical Greek. Associate Professor Sterling.

23.—GREEK POETRY IN TRANSLATIONS. Three hours, 1st term, Monday, Wednesday, and Friday, at 11:15. Lectures, recitations, private reading, writing of themes. Professor Wilcox.

24.—GREEK DRAMA IN TRANSLATIONS. Two hours, 2d term, Tuesday and Thursday, at 11:15. Lectures, recitations, private reading, writing of themes. Professor Wilcox.

25.—GREEK ARCHITECTURE. Two hours, 1st term, at 11:15. Includes the fundamental principles of all styles, with especial reference to the survivals and revivals of Greek elements. Lectures, private reading, recitations. Professor Wilcox.

26.—GREEK SCULPTURE AND PAINTING. Three hours, 2d term, Monday, Wednesday, and Friday, at 11:15. Includes for purposes of comparison and appreciation a summary view of the sculpture and painting of later and modern times. Professor Wilcox.

HARMONY. (See Music.)

AMERICAN HISTORY AND POLITICAL SCIENCE.

Professor HODDER.

Assistant Professor BATES.

Mr. GIFT, Assistant.

EQUIPMENT.—The University library is supplied with all the important secondary authorities in American history, and with a considerable amount of source material. Where original editions of early books have been unobtainable, such reprints as Thwaites's Jesuit Relations and the Goldsmid and Macklethorpe editions of Hackluyt have been substituted. The sets of Kansas state documents, of congressional debates and of American state papers are complete. The set of congressional documents begins with the second session of the twenty-eighth Congress. For the colonial period, the library has the colonial series of calendars of the British state papers, the New York colonial documents, the New Jersey archives, and other similar sets; and for the period of discovery, the works of Harris and the atlases of Nordenskiöld and Kretschmer. Particular attention has been given to the collection of books relating to Kansas and the trans-Missouri region, and a collection of American travels has been begun. Free access to all but the rarest books is given to students in the history and sociology reading-room. The supply of maps and atlases for class and reference purposes is adequate.

ADVICE AS TO CHOICE OF COURSES.—Courses 1 and 2 furnish a general view of American history, intended either for students who do not care to make a special study of the subject or as an introduction to the more advanced work. Courses 3 and 4 present a similar view of American government. Courses 1, 2, 3 and 4 may be taken continuously through the Freshman and Sophomore years to advantage. Any or all of them may be used in fulfilling the requirement of historical units in the preparatory school and college.

Courses 5, 6, 13 and 14 present two years of work during the Junior and Senior years, covering the whole period of American history in detail. Courses 7 and 8 alternate with courses 5 and 6, and may either be taken separately or in connection with those

courses. Courses 9 to 12, inclusive, present two years of continuous work in political science during the Junior and Senior years, and may profitably be taken in continuation of courses 3 and 4.

Students desiring recommendation as teachers are required to take either courses 1, 2, 5, 6, and 7, or 5, 6, 7, 13, and 14.

FOR UNDERGRADUATES.

1.—AMERICAN HISTORY I. Three hours, 1st term, Monday, Wednesday, and Friday, at 9 and 10:15. A survey of American history from 1000 to 1789, discoveries to the colonial period, the Revolution, the confederation, and the adoption of the constitution. Designed as an introduction to the work of the department. Open to all students. Assistant Professor Bates.

2.—AMERICAN HISTORY II. Three hours, 2d term, Monday, Wednesday, and Friday, at 9 and 10:15. A survey of American history from 1789 to 1876, covering the development of nationality, the development of the West, Jacksonian epoch, slavery controversy, secession and reconstruction. Continues, but not necessarily preceded by, course 1. Open to all students. Assistant Professor Bates.

3.—AMERICAN GOVERNMENT I. Two hours, 1st term, Tuesday and Thursday, at 9. A study of federal, state and local government, with particular reference to their workings. Open to Sophomores, Juniors and Seniors. Assistant Professor Bates.

4.—AMERICAN GOVERNMENT II. Two hours, 2d term, Tuesday and Thursday, at 9. A study of the rise, organization and operation of political parties and of the practical questions presented by party government. Should be preceded by course 3. Open to Sophomores, Juniors and Seniors. Assistant Professor Bates.

FOR ADVANCED UNDERGRADUATES AND GRADUATES.

5.—AMERICAN COLONIAL HISTORY. Three hours, 1st term, Monday, Wednesday, and Friday, at 2:30. This course covers the discovery of America, the period of Spanish and French exploration, and the origin and development of the English colonies. Professor Hodder.

6.—THE REVOLUTION AND THE CONSTITUTION. Three hours, 2d term, Monday, Wednesday, and Friday, at 2:30. A study of the causes and results of the American Revolution and of the formation of the constitution. Continues but not necessarily preceded by course 5. Professor Hodder.

7.—AMERICAN CONSTITUTIONAL LAW. Two hours, 1st term, Tuesday and Thursday, at 2:30. A study of the judicial construction of the constitution of the United States from a political rather than from a legal point of view. Professor Hodder.

8.—PUBLIC INTERNATIONAL LAW. Two hours, 2d term, Tuesday and Thursday, at 2:30. A statement of fundamental principles, illustrated by cases drawn from American diplomatic history. Professor Hodder.

9.—EUROPEAN GOVERNMENT. Three hours, 1st term, Monday, Wednesday, and Friday, at 11:15. A comparative study of the chief governments of Europe with respect to their structure and workings. Should be preceded by courses 3 and 4. Assistant Professor Bates.

10.—MUNICIPAL GOVERNMENT. Three hours, 2d term, Monday, Wednesday, and Friday, at 11:15. A comparative study of the government of cities in Europe and America, their relation to the central government, their organization and administration. Assistant Professor Bates.

11.—COLONIAL GOVERNMENT. Two hours, 1st term, Tuesday and Thursday, at 10:15. A study of the principal colonial systems of to-day and of present questions in colonial administration. Assistant Professor Bates.

12.—POLITICAL THEORIES. Two hours, 2d term, Tuesday and Thursday, at 10:15. A review of the historical development of theories of the state and an analysis of the political theories of the leading writers on the subject. Assistant Professor Bates.

13.—PRESIDENTIAL ADMINISTRATIONS I. Five hours, 1st term, daily, at 3:30. The political and constitutional history of the United States from 1789 to 1840. A topical treatment of the most important phases of American history. The principal subjects of study are financial and tariff history, foreign relations, the rise and growth of political parties, the history of the slavery controversy, and the expansion of the United States. Professor Hodder.

14.—PRESIDENTIAL ADMINISTRATIONS II. Five hours, 2d term, daily, at 3:30. The political and constitutional history of the United States from 1840 to 1868. Treats the causes and results of the civil war. Continuation of course 13. Professor Hodder.

15 and 16.—AMERICAN HISTORICAL SEMINARY. Five hours, 1st

and 2d terms, by appointment. A special investigation from the sources of particular topics chosen with a view to the special needs of the student. Open to Graduates and to Seniors who have had courses 1, 2, 5 and 6. Professor Hodder and Assistant Professor Bates.

EUROPEAN HISTORY.

Professor ABBOTT.

Associate Professor BECKER.

Assistant Professor NOTESTEIN.*

Assistant Professor CRAWFORD.

Mr. KLINGBERG, Fellow.

EQUIPMENT.—The department of European history is provided with over fifty large wall-maps, forty smaller maps, besides historical charts and the more important historical atlases, together with a considerable number of framed portraits, engravings, and photographs. With the departments of American history, sociology, and economics, it occupies the large reading- and seminary-room on the second floor of the Spooner Library, and with the former it shares a smaller room for the use of the more advanced students in investigation and seminary work. The general collection of books in European history comprises, in addition to a reference library, such sets as the *Monumenta Historica Germaniæ*, the *Scriptores Rerum Italicarum*, the *Parliamentary History* and *Hansard's Debates*, 1066-1840, *Reports of the Historical MSS. Commission*, the *English and Irish Statutes at Large*, the *Journals of the House of Lords* and of the *House of Commons*, *Rymer's Fœdera*, the *Reports of the Royal Historical Association*, *Howell's State Trials*, *Somer's Tracts*, *Harleian Miscellany*, complete sets of several learned societies, a considerable collection of English memoirs, diaries and correspondence, including complete sets of *Wellington* and *Castle-reagh*, and the series of English state papers, domestic, foreign, and colonial, now being completed as rapidly as possible.

ADVICE AS TO CHOICE OF COURSES.—The courses in European history are designed for three classes of students: those desiring only a general knowledge of history, those desiring to use their history in connection with work in other lines, and those desiring to specialize in history. The courses are so arranged as to offer continuous work along several lines. A course in general European history should cover courses 3, 4, 5, 6, 8, 9, and 12, inclusive. In English history, courses 1, 2, 7, 14 and 15 are to be noted. For classical students, courses 3, 4 and 14 will be

* Absent on leave, 1907-'08.

found of special importance. For those specializing in modern languages, courses 5, 6, 8, 9, 12 and 19 will best supplement work in the French, German, Italian, and Spanish. For those specializing in English, see courses 1, 2, 7, and 12. The attention of those working in American history is especially called to the courses in English history and colonization, namely, 1, 2, 7, 10, and 11, as well as to course 12, in modern Europe. Special attention of those doing most of their work in history and those expecting to teach history is called to courses 16 and 17, in historical method. In general, it is expected that those intending to do work in European history in the Junior and Senior years will have had at least two of the courses offered in the Freshman and Sophomore years. Those expecting to receive recommendations to teach history will find it necessary to have taken courses 1, 2, 3, 4, 5, 6, at least three advanced courses, of which 12 must ordinarily be one, and the teachers' course, 17.

FOR UNDERGRADUATES ONLY.

1.—ENGLISH HISTORY Ia, 400-1485. Two hours, 1st term, Tuesday and Thursday, at 8 and 9, and two hours, 2d term, Tuesday and Thursday, at 10:15. Open to all students of the College. Recitations, with lectures and assigned reading.

ENGLISH HISTORY Ib, 400-1603. Three hours, 1st term, Monday, Wednesday, and Friday, at 8 and 9. Same as course Ia. Assistant Professor Crawford.

2.—ENGLISH HISTORY IIa, 1485-1832. Three hours, 2d term, Monday, Wednesday, and Friday, at 8 and 9; three hours, 1st term, Monday, Wednesday, and Friday, at 10:15. A continuation of course Ia. Cannot be taken by those who have had course Ib.

ENGLISH HISTORY IIb, 1603-1832. Two hours, 2d term, Tuesday and Thursday, at 8 and 9. A continuation of course Ib. Cannot be taken by those who have had course Ia. Assistant Professor Crawford.

3.—GREEK HISTORY. Two hours, 1st term, Tuesday and Thursday, at 9 and 11:15. Designed, with the following course, as an introduction to Junior and Senior work in European history, and to accompany work in the classical departments. (See course 27, Greek department.) Recitations, with lectures and assigned reading. Open to all students of the College. Associate Professor Becker.

4.—ROMAN HISTORY. Three hours, 2d term, Monday, Wednesday, and Friday, at 10:15 and 11:15. Designed, with the pre-

ceding course, as an introduction to Junior and Senior work in European history, and to accompany work in the classical departments. (See Greek course 27.) Recitations, with lectures and assigned reading. Open to all students of the College. Associate Professor Becker.

5.—MEDIÆVAL HISTORY I. Three hours, 1st term, Monday, Wednesday, and Friday, at 8 and 9. The history of Europe from the fall of Rome to the Renaissance. A general course, designed, with the following course, especially as an introduction to the work in modern European history. (See also Greek course 28.) Recitations, lectures, and assigned reading. Open to all students of the College who have had one year's work in history in the University or two years in high school. Associate Professor Becker.

6.—MEDIÆVAL HISTORY II. Two hours, 2d term, Tuesday and Thursday, at 10:15 and 11:15. General course. A continuation of the above, and designed, with it, to form an introduction to work in modern European history. Open to all students of the College who have had course 5, or who have had one year's work in history in the University or two years in high school. Recitations, lectures, and reading. Associate Professor Becker.

FOR UNDERGRADUATES AND GRADUATES.

7.—ENGLISH CONSTITUTIONAL HISTORY. Three hours, 1st term, Monday, Wednesday, and Friday, at 11:15. A general course in the elements of the constitution and administration of England, with special reference to modern English government and its constitutional principles at home and abroad. Open to Juniors, Seniors, and Graduates. Assistant Professor Crawford.

8.—EUROPE IN THE SEVENTEENTH AND EIGHTEENTH CENTURIES. Three hours, 2d term, Monday, Wednesday, and Friday, at 10:15. The history of Europe from 1600 to 1789, with the emphasis on the political, economic and intellectual conditions which prepared the way for the French revolution. Lectures and recitations on assigned topics. Assistant Professor Crawford.

9.—THE FRENCH REVOLUTION AND NAPOLEONIC ERA. Three hours, 1st term, Monday, Wednesday, and Friday, at 1:30. The history of Europe from 1789 to 1815. With additional requirements of reading and reports, may be counted as a graduate course. Lectures, recitations, and assigned reading. Open to Juniors and Seniors. Professor Abbott.

10.—EUROPEAN COLONIZATION I. Two hours, 1st term, Tues-

day and Thursday, at 10:15. The history of Europeans outside of Europe, from the sixteenth century to the present. A study of exploration, conquest, and settlement, and early history of European colonies and dependencies (Spanish America, Canada, Australia, India, etc.) Special attention will be given to the growth of the British empire. Open to Juniors, Seniors, and Graduates. With additional requirements of reading and reports, may be counted as a graduate course. Lectures, recitations, and assigned reading. Professor Abbott.

11.—EUROPEAN COLONIZATION II. Two hours, 2d term Tuesday and Thursday, at 10:15. The history of European peoples, colonies and dependencies outside of Europe, principally in the nineteenth century. It will include some account of the English self-governing colonies, Canada, Australia, and South Africa, the British, French, Dutch, German and Belgian colonial empires, the expansion of Russia, and outlines of the history of Mexico, the Central and South American states. Open to Juniors, Seniors, and Graduates. Professor Abbott.

12.—THE HISTORY OF MODERN EUROPE. Five hours, 2d term, daily, at 1:30. The history of Europe, including England, from 1815 to the present. Lectures, recitations, and assigned reading. Open to Juniors with permission, Seniors, and Graduates. Professor Abbott.

13.—LATER ROMAN EMPIRE. Two hours, 2d term, Tuesday and Thursday, at 9. Political and institutional history of the later Roman and Byzantine empire, from the third to the fifteenth century. Open to Juniors, Seniors, and Graduates. Lectures, recitations, and reading. Associate Professor Becker.

14.—ADVANCED ENGLISH CONSTITUTIONAL HISTORY. Three hours, 1st term, hours to be arranged. An advanced course in the constitutional history of England, chiefly from the documents. May be in connection with course 6 or separately. Open to Seniors and Graduates. Professor Abbott.

15.—ADVANCED ENGLISH CONSTITUTIONAL HISTORY. Three hours, 2d term, hours to be arranged. Professor Abbott.

16.—HISTORICAL METHOD. Two hours, 1st term, Tuesday and Thursday, at 8. Investigation and presentation. A course in the principles of historical investigation and composition. Designed primarily for advanced students specializing in history and looking toward preparation for a thesis. Required of all candidates for the master's degree and recommended to all intending teachers of history. Study and practice in investigation

and writing. Lectures, reports, assigned reading, and comparative study of historical compositions; theses, monographs, and histories. Professor Abbott and Associate Professor Becker.

17.—HISTORICAL METHOD. Two hours, 2d term, Tuesday and Thursday, at 8. Teachers' course. Designed primarily for those expecting to teach history in secondary schools. Required of all candidates for a teacher's certificate in history. Lectures and reports on methods, materials and preparation for teaching, including bibliography and uses of library. Assigned reading and conferences. Professor Abbott, Associate Professor Becker, and Miss Watson.

19.—MEDIÆVAL INSTITUTIONS. Two hours, 1st term, Tuesday and Thursday, at 10:15. Course 5 or an equivalent a prerequisite. (a) *Political Institutions*. A course of lectures on the political institutions of western Europe from the fourth to the fourteenth century. The lectures will be supplemented by reading in the library and by the preparation of one or more essays. A knowledge of French or German is highly desirable. (Given in 1907-'08, omitted in 1908-'09.) (b) *Ecclesiastical Institutions*. Will cover the history of the mediæval church from the fourth to the fourteenth century, with particular emphasis on the organization of the church in the twelfth and thirteenth centuries. Lectures, recitations, and the preparation of essays on special topics. (Given in 1908-'09.) Associate Professor Becker.

20.—RENAISSANCE AND REFORMATION. Two hours, 1st term, Tuesday and Thursday, at 11:15. A more advanced study of the intellectual and religious revolt of the fifteenth and sixteenth centuries. Assistant Professor Crawford.

21.—HISTORICAL WRITERS I. One hour, 1st term, Tuesday, at 8. In this and the ensuing course, the work of representative historians will be read; one author will be taken up each term. Required of candidates for the master's degree, and recommended to all advanced students in history. Professor Abbott.

22.—HISTORICAL WRITERS II. One hour, 2d term, Tuesday, at 8. A continuation of course 21. Professor Abbott.

23.—SEMINARY. Graduate students and such Seniors as have permission will be admitted to the seminary, work in which will vary from year to year. An endeavor will be made to fit particular conditions of the year and the needs of the students of that year in so far as possible. Five hours credit. By appointment. Professor Abbott.

24.—SEMINARY. A continuation of course 19. Five hours credit. By appointment. Professor Abbott.

THESIS. Candidates for the degree of master of arts in this department are subject to the usual requirement of a thesis written under the direction of the department. This must be accompanied by reports and conferences, and should be preceded or accompanied by course 16 and by courses 23 and 24. Hours for conference to be arranged with instructor. 2d term. Professor Abbott.

HISTORY CONFERENCE. The department of European history, with the coöperation of other departments in the College, carries on a conference of those interested in history and allied subjects, open to all members of the University. The meetings occur, ordinarily, once every two weeks during the first half of the second term.

ITALIAN.

(See Romance Languages and Literatures.)

LATIN LANGUAGE AND LITERATURE.

Professor WALKER.

Associate Professor OLIVER.

Assistant Professor MURRAY.

EQUIPMENT.—The department has about 1800 bound volumes, besides a considerable number of dissertations and other pamphlets; and its annual library appropriation enables it both to secure most of the important new books relating to its work and to fill up gaps in its present equipment. It has been the aim to secure a few of the most important editions of all authors and the most important works representing all branches of Latin study; but especial pains have been taken to provide an adequate apparatus for graduate work on Cæsar, Horace, Juvenal, Vergil, epigraphy, political institutions, and Latin syntax. There is also a good equipment for such courses as topography and private life. The department receives several classical journals and sets of studies and reports, and has complete sets of a few of the most important of them. In addition to the illustrative material of the classical museum, the department has about 1200 photographs, illustrating especially the courses in topography and private life; and these are being added to rapidly.

ADVICE AS TO CHOICE OF COURSES.—To secure either a recommendation as teacher of Latin or a teacher's diploma in Latin,

the student must elect at least twenty-five hours in the department of Latin beyond course 3. Courses 4 and 12 must be included. Other courses especially recommended to those who intend to teach are 6, 8, 9, 11, 13, 21, 23, and 24, and the course in ancient history given by the department of European history. Those who wish to do the best work in Latin will need, in addition to a greater amount of Latin, some Greek and a reading knowledge of German.

FOR UNDERGRADUATES ONLY.

1.—PREPARATORY PROSE COMPOSITION. Three hours, 2d term, Monday, Wednesday, and Friday, at 1:30. Bennett's Prose Composition, entire. Students whose preparatory course in Latin has been deficient in prose composition are conditioned in the subject and are usually required to take this course, for which no College credit will be given. But if the deficiency is slight they may remove the condition by taking the composition of course 2, one day a week. Assistant Professor Murray.

2.—CICERO'S ORATIONS. Five hours, 1st term, daily, at 1:30. The four against Catiline, the one for the Manilian Law, and the one for the Poet Archias. Lessons 23-44 of Bennett's Prose Composition. This course may be taken for College credit by students who enter with Cæsar and Vergil, or with German and two units of Latin. It is required, without College credit, of those who enter with only Cæsar. Students who make up an entrance condition in Cicero under any private tutor will be examined by the department in both translation and composition. Associate Professor Oliver.

3.—VERGIL'S ÆNEID (six books). Five hours, daily, 1st term, at 8; 2d term, at 11:15. With the study of mythology and careful practice in metrical reading. The chief stress will be laid on the literary side of the work. Open only to those who enter with three years of Latin and without Vergil. 1st term, Assistant Professor Murray; 2d term, Associate Professor Oliver.

4.—CICERO (De Senectute). Three hours, 1st term, Monday, Wednesday, and Friday, at 9 and 11:15; and 2d term, Monday, Wednesday, and Friday, at 8. With prose composition and a thorough review of the grammar. Open to those who enter with both Cicero and Vergil, and required of those who expect to take more advanced courses in the department. 1st term, at 9, Assistant Professor Murray; at 11:15, Associate Professor Oliver; 2d term, Assistant Professor Murray.

5.—LIVY (one book). Two hours, 1st term, Tuesday and Thursday, at 9 and 11:15; and 2d term, Tuesday and Thursday, at 8. This course is intended to accompany course 4, but may be omitted by well-prepared students. 1st term, at 9, Assistant Professor Murray; at 11:15, Associate Professor Oliver; 2d term, Assistant Professor Murray.

6.—HORACE (Odes). Three hours, 1st term, Monday, Wednesday, and Friday, at 11:15; and 2d term, Monday, Wednesday, and Friday, at 9. With careful practice in metrical reading. The chief stress is laid on the literary side of the work. Must be preceded by course 4. 1st term, Assistant Professor Murray; 2d term, Associate Professor Oliver.

7.—TERENCE (two plays). Two hours, 2d term, Tuesday and Thursday, at 9. Must be preceded by course 4. Professor Walker.

8.—CICERO'S LETTERS. Three hours, 1st term, Monday, Wednesday, and Friday, at 10:15. The chief stress is laid on the historical points involved, so that the student gets a good knowledge of the period in which Cæsar and Cicero lived. The course is therefore especially helpful to teachers. Must be preceded by five hours beyond course 3. Professor Walker.

9.—HISTORY OF ROMAN LITERATURE. Two hours, 1st term, Tuesday and Thursday, at 10:15. Mackail's Latin Literature, supplemented by lectures and assigned reading in English translations of the more important authors. Open to all students, without regard to their Latin preparation. Associate Professor Oliver.

10.—HORACE (Satires and Epistles). Two hours, 2d term, Wednesday and Friday, at 10:15. Must be preceded by eight hours beyond course 3. Professor Walker.

11.—ROMAN PRIVATE LIFE. One hour, 2d term, Monday, at 10:15. Johnston's Private Life of the Romans, supplemented by occasional lectures and the use of illustrative material. Open to all students, without regard to their Latin preparation. Associate Professor Oliver.

12.—PROSE COMPOSITION. Two hours, 2d term, Tuesday and Thursday, at 10:15. Part I or part II of Nutting's Advanced Latin Composition. Intended to accompany courses 10 and 11, but may be taken earlier by well-prepared students, the only necessary preparation being given in course 4. Required of all who wish a recommendation from the department as teachers of Latin. Professor Walker.

FOR ADVANCED UNDERGRADUATES AND GRADUATES.

13.—ADVANCED PROSE COMPOSITION. Two hours, 1st term, Tuesday and Thursday, at 2:30. Open to Juniors, Seniors, and Graduates. Must be preceded by course 12. Professor Walker.

14.—PLAUTUS. Two hours, 1st term, Tuesday and Thursday, at 1:30. Open to Juniors, Seniors, and Graduates. Must be preceded by twelve hours beyond course 3. Professor Walker.

15.—VERGIL'S ECLOGUES AND GEORGICS. Two hours, 2d term, Tuesday and Thursday, at 10:15. Open to Juniors, Seniors, and Graduates. Must be preceded by twelve hours beyond course 3. Associate Professor Oliver.

16.—LUCRETIVS. Three hours, 1st term, Monday, Wednesday, and Friday, at 10:15. Open to Juniors, Seniors, and Graduates. Must be preceded by twelve hours beyond course 3. Associate Professor Oliver.

17.—THE ROMAN HISTORIANS. Three hours, 2d term, Monday, Wednesday, and Friday, at 2:30. Lectures, and rapid reading in Cæsar, Sallust, Livy, Tacitus, and Suetonius. The course aims at an acquaintance with the important Latin authorities for Roman history. Open to Juniors, Seniors, and Graduates. Must be preceded by twelve hours beyond course 3. Assistant Professor Murray.

18.—JUVENAL. Three hours. (Not given in 1908-'09.) Open to Juniors, Seniors, and Graduates. Must be preceded by twelve hours beyond course 3.

19.—LITERATURE OF THE EMPIRE. Three hours. (Not given in 1908-'09.) A study of the history of literature under the empire, supplemented by the reading of portions of the most important works. Open to Juniors, Seniors, and Graduates. Must be preceded by twelve hours beyond course 3.

20.—THE TOPOGRAPHY OF ROME. Two hours, 2d term, Tuesday and Thursday, at 9. Lectures and reading. Illustration by the use of photographs and stereopticon. Each member of the class will present a written report on a subject investigated by himself. Open to all Juniors, Seniors, and Graduates. Associate Professor Oliver.

21.—ROMAN POLITICAL INSTITUTIONS. Three hours, 2d term, Monday, Wednesday, and Friday, at 9. A study of the development and form of the Roman governmental system through the republic and the early empire. The course will be conducted by lectures and assigned readings. Open to all Juniors, Seniors,

and Graduates who have had the full amount of preparatory Latin. Assistant Professor Murray.

22.—INVESTIGATION IN ROMAN POLITICAL INSTITUTIONS. Two hours, 2d term, Tuesday and Thursday, at 9. Given only in connection with course 21. This course will be conducted by additional lectures, and by additional investigations by members of the course. Open to Seniors and Graduates who have specialized in Latin. Assistant Professor Murray.

23.—TEACHERS' COURSE IN LATIN. Two or five hours, 1st term, Tuesday and Thursday, at 10:15. Two hours a week of classroom work, with or without three hours of practice teaching. The classroom work consists of (a) discussion of the best literature on the aims and methods of teaching Latin, (b) a critical examination of some text-books used in secondary Latin teaching, and (c) a few lectures on the more difficult points in Latin syntax, with readings in portions of the preparatory Latin authors for illustrative examples. Open to Seniors and Graduates. Professor Walker.

24.—CÆSAR'S GALLIC CAMPAIGNS. Three hours, 2d term, Monday, Wednesday, and Friday, at 1:30. A critical study of the Gallic war, with especial reference to military, historical and geographical questions. The course is intended both as an introduction to the methods of the graduate seminary and as a practical course for teachers. Open to properly prepared Seniors and to Graduates. Professor Walker.

25.—VERGIL. Three hours. (Not given in 1908-'09.) A rapid survey of the contents of the *Æneid*, and a critical study of selected passages which involve difficulties of interpretation or of textual criticism. The course is intended both as an introduction to the methods of the graduate seminary and as a practical course for teachers. Open to properly prepared Seniors and to Graduates.

26.—LATIN EPIGRAPHY. Three hours, 1st term, Monday, Wednesday, and Friday, at 2:30. This course has as its object an acquaintance with the forms and subject-matter of Latin inscriptions. Members will be assigned investigations of the contributions of epigraphy to political, constitutional, and economic history, and to other fields. Open to Seniors and Graduates who have specialized in Latin. Assistant Professor Murray.

27.—INVESTIGATION IN LATIN EPIGRAPHY. Two hours. (Not given in 1908-'09.) Given only in connection with course 25. Additional investigation of special topics will be expected of members of the course.

FOR GRADUATES ONLY.

28.—SEMINARY. Five hours, 1st term, at 9. An author or some limited portion of the field of Latin study is chosen each year for special investigation by the graduate students of the department. The work consists largely of papers by members of the course, the object being to train students for original investigation. Latin syntax has been chosen for the year 1908-'09. Professor Walker.

29.—SEMINARY (continued). Five hours, 2d term, at 11:15. A subject for the thesis required of all candidates for the degree of master of arts is expected to present itself in the course of the work, and in the second term a portion of the time is devoted to the working up of that subject. Professor Walker.

MATHEMATICS AND ASTRONOMY.

Professor MILLER.

Professor NEWSON.

Associate Professor VAN DER VRIES.

Assistant Professor ASHTON.

Mr. PITCHER, Instructor.

Mr. MITCHELL, Instructor.

EQUIPMENT.—The following represents the equipment for instruction in mathematics and astronomy:

Mathematics. (a) Models. Eighty-eight models in wood, manufactured by Schröder, Germany. Fifty-three models of algebraic surfaces, embracing cubics, surfaces of revolution, ellipsoids, paraboloids, and hyperboloids, and intersections of the same, made of plaster of Paris, and weighted strings, also from Germany.

Mathematics. (b) Library. The University library contains more than 2000 volumes of mathematical works, including nearly all the standard treatises on all branches of mathematics. Among others, the following complete sets of journals are specially valuable: The American Journal of Mathematics, Annals of Mathematics, Bulletin and Transactions of the American Mathematical Society, American Mathematical Monthly, Mathematische Annalen, Acta Mathematica, Bulletin de la Societe Mathematique de France, Journal de Mathematiques pures et appliquees, Annali di Matematica, series III, and Circolo Matematico di Palermo. On the bibliographical side are to be found the Jahrbuch der Fortschritte der Mathematik and the Revue Semestrielle des Publications Mathematiques, both sets complete. There are, in addition, the collected works of most of

the great mathematicians of the last century. Nearly all the mathematical journals of Europe and America are regularly received.

Astronomy. A six-inch telescope, manufactured by A. Clark & Sons, with eye-glasses ranging in power from 30 to 600; a two-inch transit telescope; a sextant; a twenty-inch celestial globe; 600 astronomical slides; a projection lantern; a full set of E. L. Trouvelot's astronomical plates; star charts and maps; Hagan's Atlas Stellarum Variabilium; Huggins's Atlas of Representative Stellar Spectra; and Atlas Photographique de la Lune, by M. M. Loewy and M. P. Puiseux.

The University library contains over 1000 volumes of astronomical works, and a large number of European and American astronomical journals.

Mathematics.

ADVICE AS TO CHOICE OF COURSES.—Students who desire to take a full course in mathematics are advised to complete the following courses 1-8 by the end of the Sophomore year. These are a necessary preparation for the courses for advanced undergraduates and graduates. During the Junior and Senior years courses 9-17 may be taken in almost any order. These should all be completed by the end of the college course. Students specializing in mathematics are also advised to elect some work in logic and psychology, descriptive geometry and drawing, astronomy, and a full year's work in physics. Such students are also advised to acquire early in their course a reading knowledge of French and German. Usually for this purpose French 1 and 2 and German 1-4 are sufficient. Italian 1 and 2 will also be a great help.

Students who are preparing to become teachers of mathematics in high schools and academies should at least complete courses 1-9 and course 18. This is the minimum requirement for the recommendation of the department. But those aiming at real proficiency in mathematical teaching should take all the courses open to undergraduates.

FOR UNDERGRADUATES ONLY.

1.—SOLID GEOMETRY. Three hours, 2d term, Monday, Wednesday, and Friday, at 1:30. The usual theorems and constructions of standard text-books and applications to the mensuration of surfaces and solids. Wentworth's Solid Geometry.

Open to all students who do not offer solid geometry for entrance. Mr. Mitchell.

2.—COLLEGE ALGEBRA. Three hours, both terms, Monday, Wednesday, and Friday—1st term, at 8, 9, 10:15, 11:15, 2:30, and 3:30; 2d term, at 9, 11:15, 2:30, and 3:30. Rapid review of exponents, radicals, and quadratic equations; graphical representation; complex numbers; logarithms; determinants; theory of equations; numerical equations of higher degree. Ashton's College Algebra. Open to all students of the College. Associate Professor Van der Vries and assistants.

3.—PLANE TRIGONOMETRY. Two hours, both terms, Tuesday and Thursday—1st term, at 8, 9, 10:15, 11:15, 2:30, and 3:30; 2d term, at 9, 11:15, 2:30, and 3:30. The six trigonometric functions; principal formulas of plane trigonometry; solution of triangles and practical problems. Ashton's Trigonometry. Open to all students of the College. May be taken at the same time with course 1 or 2. Assistant Professor Ashton and assistants.

4.—ANALYTIC GEOMETRY I. Two hours, both terms, Tuesday and Thursday—1st term, at 10:15 and 11:15; 2d term, at 8, 9, 10:15, 2:30, and 3:30. The straight line and circle; plane and sphere; loci problems. Ashton's Analytic Geometry. Open to all students who have completed courses 2 and 3. Professor Newson and assistants.

5.—CALCULUS I. Three hours, both terms, Monday, Wednesday, and Friday—1st term, at 10:15 and 11:15; 2d term, at 8, 9, 10:15, 2:30, and 3:30. Differential calculus; fundamental principles; derivatives; applications to geometry and mechanics; maxima and minima; indeterminates; series. Granville's Calculus. Open to students who have completed or are taking course 4. Professor Miller and assistants.

6.—ANALYTIC GEOMETRY II. Two hours, Tuesday and Thursday—1st term, at 10:15, 11:15, and 2:30; 2d term, at 10:15 and 11:15. Conic sections; higher plane curves; solid analytics. Ashton's Analytic Geometry. Open to students who have completed course 4. Professor Newson and assistants.

7.—CALCULUS II. Three hours, Monday, Wednesday, and Friday—1st term, at 10:15, 11:15, and 2:30; 2d term, at 10:15 and 11:15. Integral calculus; integration; definite integrals; application to lengths, areas, and volumes. Granville's Calculus.

Open to students who have completed course 5; may be taken at the same time with course 6. Professor Miller and assistants.

8.—CALCULUS III. Two hours, both terms, Tuesday and Thursday—1st term, at 11:15; 2d term, at 10:15 and 11:15. A continuation of courses 5 and 7. Application of calculus to problems in solid geometry; centers of gravity; moments of inertia; differential equations; vector quantities. Open to students who have completed course 7. Professor Newson and Associate Professor Van der Vries.

9.—SPHERICAL TRIGONOMETRY. Two hours, 2d term, Tuesday and Thursday, at 9. Principal formulas; solution of spherical triangles; applications to navigation and astronomy. Open to students who have completed courses 1, 2, and 3. Miller's Trigonometry. Professor Miller.

18.—TEACHERS' COURSE. Two hours, 2d term, Tuesday and Thursday, at 9. Designed for teachers and students preparing to become teachers of mathematics. It embraces the history, pedagogy and mutual relations of the mathematical subjects usually taught in the public schools from the beginning of the seventh grade to the end of the high-school course. This course consists of (1) history of mathematics, reading, and lectures; (2) a comparative study of the mathematical curricula of the schools of this country and of Europe; (3) discussions on the best methods of presenting the topics; (4) practice-teaching. Open to Juniors and Seniors who have completed courses 1-7. Professor Newson.

FOR ADVANCED UNDERGRADUATES AND GRADUATES.

10.—HIGHER ALGEBRA. Three hours, 1st term, Monday, Wednesday, and Friday, at 9. Introduction to the theory of numbers; proofs of the elementary laws of algebra; theory of limits; convergency of infinite series; uniform convergence; differentiation and integration of series; infinite products. Open to students who have completed the undergraduate courses. Assistant Professor Ashton.

11.—THEORY OF EQUATIONS A. Three hours, 2d term, Monday, Wednesday, and Friday, at 10:15. General properties and transformation of equations; algebraic solutions of the cubic and quartic; Sturm's theorem; numerical solution of algebraic and transcendental equations. Open to students who have completed courses 1-8. Associate Professor Van der Vries.

12.—DIFFERENTIAL EQUATIONS. Three hours, 2d term, Mon-

day, Wednesday, and Friday, at 11:15. Methods of solving ordinary and partial differential equations; applications to geometry and physics. Open to students who have completed courses 1-8. Professor Miller.

13.—ANALYTIC MECHANICS. Three hours, 2d term, Monday, Wednesday, and Friday, at 9. Geometry of motion; kinematics; statics; dynamics of a particle and of a rigid body. Open to students who have completed courses 1-8. Professor Newson.

14.—SOLID ANALYTIC GEOMETRY. Three hours, 1st term, Monday, Wednesday, and Friday, at 11:15. Analytic geometry of planes, lines, spheres, and quadric surfaces. Open to students who have completed courses 1-8. Associate Professor Van der Vries.

15.—ADVANCED ANALYTIC GEOMETRY. Three hours, 2d term, Monday, Wednesday, and Friday, at 1:30. Point and line coordinates; poles and polars; reciprocal polars; projection. Open to students who have completed courses 1-8. Assistant Professor Ashton.

16.—ADVANCED CALCULUS. Three hours, 2d term, Monday, Wednesday, and Friday, at 9. Partial differentiation and integration; definite integrals; elliptic integrals; double and multiple integrals; Green's theorem. Open to students who have completed courses 1-8. Professor Newson.

17.—COMPLEX NUMBERS. Two hours, 1st term, Tuesday and Thursday, at 9. Analytic and geometric properties of complex numbers; condition of functionality; circular transformations, applications. Open to students who have completed courses 1-8. Professor Newson.

FOR GRADUATES ONLY.

19.—QUATERNIONS (theory and application). Three hours, by appointment. Professor Miller.

20.—PROJECTIVE GEOMETRY. Three hours. Geometry of the projective group in the plane and in space; analytic and synthetic methods; application to non-Euclidian geometry. By appointment. Professor Newson.

21.—HIGHER-PLANE CURVES. Three hours. General methods; cubics and quartics; general theory of algebraic curves. By appointment. Associate Professor Van der Vries.

22.—THEORY OF FUNCTIONS OF A COMPLEX VARIABLE. Three hours. Theories of Cauchy, Weierstrass, and Riemann; integration; conformal representation; algebraic functions and their integrals. By appointment. Assistant Professor Ashton.

23.—GALOIS'S THEORY OF EQUATIONS. Three hours. The application of the method of groups to the study of algebraic equations. By appointment. Assistant Professor Ashton.

24.—THEORY OF TRANSFORMATION GROUPS. Three or five hours. An analytic and synthetic treatment of various transformations of space, emphasizing the notion of a group of transformations. The groups of collineations, conformal transformations, motions and contact transformations are considered. By appointment. Professor Newson.

25.—THEORY OF SURFACES AND TWISTED CURVES. Three hours. Properties of surfaces of the third and fourth orders, and of certain other general classes of surfaces; also properties of twisted curves of the third and fourth orders. By appointment. Associate Professor Van der Vries.

26.—THEORY OF FUNCTIONS OF A REAL VARIABLE. Three hours. The real number system, point aggregates, limits, continuity, differentiation, integration, proper integrals, improper integrals. By appointment. Professor Newson.

27.—THEORY OF EQUATIONS. B. Three hours. Advanced theory of determinants, methods of elimination, theory of covariants and invariants and of algebraic forms. By appointment. Associate Professor Van der Vries.

Astronomy.

FOR UNDERGRADUATES ONLY.

These courses are open to Juniors and Seniors of the College.

1.—DESCRIPTIVE ASTRONOMY. Three hours, 1st term, Monday, Wednesday, and Friday, at 9. Lectures and recitations, with occasional evenings for observation. Text-book, Young's General Astronomy. Professor Miller.

2.—PRACTICAL ASTRONOMY. Three hours, 2d term, Monday, Wednesday, and Friday, at 9. Theory of least squares. Spherical trigonometry. Use of a sextant and transit instrument, determination of time, latitude and longitude, etc. Text-book, Young's Manual of Astronomy. Professor Miller.

FOR ADVANCED UNDERGRADUATES AND GRADUATES

3.—CELESTIAL MECHANICS. Three hours. Text-book, Moulton's Celestial Mechanics. By appointment. Professor Miller.

MINERALOGY. (See Geology.)

MUSIC.

Harmony and Musical Appreciation.

Courses 1 and 2 are open to students of all classes. Courses 3 to 6 are open to Juniors, Seniors, and Graduates, the work counting as one full course. Members of the Orchestra and Glee Club may obtain a one-hour credit for their work by enrolling in courses 1 and 2, for which they will substitute their practical work.

1.—MUSICAL APPRECIATION. One hour, 1st term, Monday, at 2:30. A course for those who wish to learn to understand music as listeners, without necessarily being performers. The different styles of music are explained and illustrated, with special reference to the University concerts. Professor Skilton.

2.—DEVELOPMENT OF MUSIC. One hour, 2d term, Monday, at 2:30. Detailed examination of famous compositions with reference to the history of their time and country. Professor Skilton.

3.—HARMONY. Two hours, 1st term, Tuesday and Thursday, at 2. The study of overtones, scales, intervals; the formation and connection of triads and seventh chords with their inversions; close and open harmony; the harmonization of melodies in soprano or bass and of original melodies. Practical work at the piano. Chadwick's Harmony used. Professor Skilton.

4.—HARMONY. Two hours, 2d term, Tuesday and Thursday, at 2. Continuation of course 3. Professor Skilton.

5.—HARMONY. Two hours, 1st term, Tuesday and Friday, at 3. The study of modulations, altered chords, and the inharmonic material of music. Practical work at the piano and original composition. Chadwick's Harmony used. Open only to those who have taken courses 3 and 4. Professor Skilton.

6.—MUSICAL ANALYSIS. Two hours, 2d term, Tuesday and Friday, at 3:30. Review of harmony. The simple homophonic forms, the phrase section, period, two- and three-part-song form. Composition of such forms. Open only to those who have completed courses 3 to 5. Professor Skilton.

PHARMACY.

Professor SAYRE.

Assistant Professor EMERSON.

For equipment, see under School of Pharmacy.

FOR ADVANCED UNDERGRADUATES AND GRADUATES.

1.—PHYSIOLOGICAL AND MEDICAL CHEMISTRY. Five hours, 2d term, 1:30 to 3:30. This course is offered to meet the requirements of medical students. Products of physiological interest are separated from animal tissues and organs and studied in detail. Special attention is given to the study of carbohydrates, proteins, and the normal and abnormal products of animal life. The second part of the course consists of five weeks of urinalysis, embracing lectures, recitations, and work in both chemical and microscopical laboratories. Professor Sayre and Assistant Professor Emerson.

2.—ADVANCED WORK IN PHYSIOLOGICAL CHEMISTRY. Analysis of dietetics used in medicine, quantitative valuation of proximate constituents of foods, assay of digestive ferments, and the separation of organic principles of animal tissues, etc. Professor Sayre and Assistant Professor Emerson.

PHILOSOPHY.

Professor TEMPLIN.

Professor BOODIN.

Assistant Professor HOGG.

Miss CLARKE, Fellow.

EQUIPMENT.—The philosophical library contains about 2000 volumes, including complete sets of the leading philosophical and psychological periodicals published in the English, German and French languages. These are all available for students working in the department, and are kept in a special departmental reading-room of the general library.

The work in experimental psychology is carried on in a laboratory equipped with a considerable supply of apparatus of various kinds, such as is used in modern psychological laboratories.

FOR UNDERGRADUATES ONLY.

1.—ELEMENTS OF PSYCHOLOGY. Given each term. Three hours, Monday, Wednesday, and Friday, at 9. A general study of mental processes and their laws. Lectures, text-book, and reports, together with laboratory work. James's Psychology is used as a text. Three hours a week of laboratory work are required. This serves to illustrate the principles of psychology

and furnishes training in psychological observation. This course is required for admission to all of the following courses in the department except course 2, which may be taken at the same time. Open to Sophomores, Juniors, and Seniors. Professor Boodin and Assistant Professor Hogg.

2.—INTRODUCTION TO PHILOSOPHY. Two hours, both terms, Tuesday and Thursday, at 9. A general survey of the methods, aims and results of the various natural sciences, their relations to each other, and their ultimate significance. The course thus serves as an elementary introduction to philosophy. Lectures and assigned readings. Should be preceded by elementary courses in the biological sciences and physical sciences and should precede advanced courses in philosophy. Open to all students in the College who have completed or are taking course 1. Professor Templin.

FOR ADVANCED UNDERGRADUATES AND GRADUATES.

3.—EXPERIMENTAL PSYCHOLOGY. Three hours, 1st term, Monday, Wednesday, and Friday, at 1:30. A laboratory course, following the laboratory work of course 1. Additional work in sensation is first given, followed by a study of the processes of perception, attention, affection, and association. Titchener's *Experimental Psychology Laboratory Manual* is used as a text. Assistant Professor Hogg.

4.—EXPERIMENTAL PSYCHOLOGY. Three hours, 2d term, Monday, Wednesday, and Friday, at 1:30. A continuation of course 3. Assistant Professor Hogg.

5.—EDUCATIONAL PSYCHOLOGY. Three hours, 1st term, lectures on Tuesday and Thursday, at 9; two hours' laboratory work, by appointment. This course will consist of a deeper study of the general principles of psychology as involved in attention, association, memory, and apperception, considered with special reference to the work of the teacher. Lectures, assigned readings in standard authors, and reports, together with laboratory work. The laboratory work will occupy two hours a week and will supplement the work of the classroom. Professor Boodin and Assistant Professor Hogg.

6.—SOCIAL PSYCHOLOGY. Two hours, 1st term, Tuesday and Thursday, at 9. The study of the social consciousness, especially as shown in the psychology of the crowd and of religion. The work is based upon the writings of Adam Smith, Baldwin, Le Bon, Tarde, James, Starbuck, Coe, etc. Professor Boodin.

7.—LOGIC, DEDUCTIVE AND INDUCTIVE. Three hours, 2d term,

Monday, Wednesday, and Friday, at 9. A text-book course, based on Welton's Manual of Logic. Emphasis is placed on the theory of induction. Open to Juniors and Seniors who have had course 1. Assistant Professor Hogg.

8.—HISTORY OF PHILOSOPHY. Three hours, first term, Monday, Wednesday, and Friday, at 10:15. This course outlines the principal movements or tendencies in the history of thought, beginning with Greek thinkers. In the study of Greek philosophy especially, the attempt is to show how the philosophical problems became differentiated from the other problems of thought, such as the religious and scientific. Throughout the course careful attention is paid to the relation of the philosophical movements to the movements of history in general. The work is conducted by lectures, assigned readings in a text, in the standard histories, and in the authors themselves. Professor Boodin.

9.—HISTORY OF PHILOSOPHY. Three hours, 2d term, Monday, Wednesday, and Friday, at 10:15. A continuation of course 8. Open to students who have had course 8, and to others only on special permission of the instructor. Professor Boodin.

10.—PHILOSOPHICAL CLASSICS. Two hours, 1st term, Tuesday and Thursday, at 10:15. This course furnishes an opportunity for a first-hand and systematic study of some of the more important works and movements in the history of philosophy. The authors taken up will vary with succeeding terms. The course may be pursued together with or following the work in history of philosophy, but not independently of it. To accommodate students desiring to carry both these subjects, they are offered at the same hour but on alternate days. Professor Boodin.

11.—PHILOSOPHICAL CLASSICS. Two hours, 2d term, Tuesday and Thursday, at 10:15. A continuation of course 10. Professor Boodin.

12.—THE THEORY OF KNOWLEDGE. Two hours, 1st term, hours by appointment. This course will deal with the problem of the relation of truth to reality as based upon Sigwart, Lotze, Bosanquet, Bradley, James, etc. Open to Seniors and Graduates. Professor Boodin.

13.—METAPHYSICS. Two hours, 2d term, by appointment. This course will deal with some of the important tendencies in contemporary philosophic thinking. Professor Boodin.

14.—THE PHILOSOPHY OF RELIGION. Three hours, 2d term, Tuesday and Thursday, at 9, third hour by appointment May

be used as sequel to social psychology. This course aims to interpret the religious consciousness, first, by tracing the evolution of religion in two or more important religious systems, such as the Hindoo religion as compared to Hebrew religion. It then takes up the modern idealistic interpretation of the individual nature and God. At the close the instructor's own view-point is given. Lectures, readings, and reports. Professor Boodin.

15.—SYSTEMATIC ETHICS. Three hours, 1st term, Monday, Wednesday, and Friday, at 9. This course undertakes a critical examination into the psychological foundations of human conduct, a review of the historic ethical theories, and the development of a satisfactory system of ethics. This program includes a study of the following subjects: The emotions, conscience, and will; the Hellenic, Christian, Mediæval and modern conceptions of life; hedonism, utilitarianism, socialism, formalism, asceticism, and idealism; responsibility and freedom, duty, right, and virtue, benevolence and justice, guilt and redemption, progress and perfection. Professor Templin.

16.—PRACTICAL ETHICS. Two hours, 2d term, Monday and Wednesday, at 9. The application of theoretical principles of conduct to practical problems of life. Following are some of the subjects that will be discussed: Childhood and its problems; the family and the home; the school, the press, the state, and the church; the production, distribution and use of property; professional life, temperance, fashion, and luxury; citizenship, government, and punishment; science, literature, art, culture, and religion. Must be preceded by course 15. Professor Templin.

17.—ESTHETICS. Two hours, 2d term, Tuesday and Thursday, at 8. A historical and constructive treatment of the problem of the beautiful, followed by an application of esthetic theory to nature and the fine arts. Lectures, discussions, and assigned readings. Professor Templin.

FOR GRADUATES ONLY.

18.—SEMINARY. Five or ten hours, 1st term, by appointment. Opportunity will be given graduate students to continue in a more exhaustive manner the study of any of the subjects offered in the College courses, and to engage in original investigation of unsolved problems. The work will be arranged to suit the special needs of individual students and will be under the immediate supervision of some instructor in the department.

19.—SEMINARY. Five or ten hours, 2d term, by appointment. A continuation of the preceding course.

PHYSICAL EDUCATION.

Professor NAISMITH.
Assistant Professor FISH.
Mr. HAGERMAN.

For equipment, see under "Gymnasium."

ADVICE AS TO CHOICE OF COURSES.—Courses 6, 7, 8, 9 and 10 are designed for those who intend to teach this subject. Course 12 is designed for teachers, to give them such a knowledge of the growth and development of the child that they will be able to care for the health of the pupil and to arrange his studies to suit his development. Courses 11 and 12 are arranged with reference to the course in domestic science.

FOR UNDERGRADUATES ONLY.

1.—HYGIENE. One hour, 1st term, men, Monday; women, Thursday. Lectures designed to help the students to maintain health, dealing with food, clothing, exercise, conditions conducive to study, prophylactic treatment, especially in regard to infectious and contagious diseases. Required of Freshmen.

2.—MARCHING. One hour, 1st term. Elementary work in free-hand, dumb-bells, wands, and clubs; hygienic work on the apparatus; sprinting, jumping; swimming; gymnastic games for recreation. Required of Freshmen.

3.—ADVANCED WORK IN FREE-HAND. Two hours, 2d term. Calisthenics, and hygienic work on the apparatus; athletics of an all-round nature; diving; games for skill and physical judgment. Required of Freshmen.

4.—EDUCATIONAL WORK WITH LIGHT AND HEAVY APPARATUS. One hour, 1st term. Fencing and broadsword; games requiring skill and self-control; rescuing the drowning; squad leading in calisthenics and apparatus work. Required of Sophomores.

5.—SPECIALIZING IN SOME LINE OF EXERCISE. One hour, 2d term. Boxing and wrestling; conducting games, competitions, and exhibitions. Required of Sophomores.

6.—LEADERS' CLASS. Two hours, by appointment. Analysis of gymnastic movements; invention of drills and combination of exercises; conducting classes; the use of safety methods and apparatus. Open to Juniors and Seniors.

Those physically qualified may elect the following in their season, in place of the foregoing: Football, baseball, tennis, basketball, track and field athletics, hockey, and lacrosse. This work

must be under the appointed coach or leader, in order to obtain credit.

Additional courses will be arranged for special work and prescribed work which cannot be done in class.

Every student may receive a thorough medical and physical examination, with the results platted on a chart. Where needed, special exercises will be prescribed.

Every student using the gymnasium or who is a candidate for any University team must pass a satisfactory medical and physical examination.

FOR ADVANCED UNDERGRADUATES AND GRADUATES.

7.—MECHANICAL ANATOMY. Three hours, 1st term, Monday, Wednesday, and Friday, at 9. The study of the bones, articulations and muscles in their relations as mechanical principles. The location of the viscera. The distribution of the principal nerves and blood-vessels, and the topography of the muscles. Open to Juniors and Seniors. Professor Naismith.

8.—THE PRINCIPLES OF ATHLETIC SPORTS AND GAMES. Two hours, 1st term, Tuesday and Thursday, at 9. The analysis of the different athletic events, methods of teaching, the relation of the various games, the physique and mental power that is required in and developed by the different sports. Professor Naismith.

9.—PHYSICAL EDUCATION. Three hours, 2d term, Monday, Wednesday, and Friday, at 9. Dealing with the effects of exercise on the various systems of the body; history of the subject; prescription of exercise, and mechanical therapeutics. Professor Naismith.

10.—PHYSICAL DIAGNOSIS. Two hours, 2d term, Tuesday and Thursday, at 9. Medical, physical and functional examinations; anthropometry and its applications. Professor Naismith.

11.—PHYSICAL EDUCATION OF CHILDREN. Three hours, 2d term, Monday, Wednesday, and Friday, at 8. Including the growth of the child and conditions that affect its development; effect of physical, mental and emotional strain. Relation of physical condition to the development of character and mental ability; methods of obtaining the best results. Professor Naismith.

12.—DEVELOPMENT OF SCHOOL CHILDREN. Two hours, 2d term, Tuesday and Thursday, at 8. Study of the normal periods of adolescence; the development of the nerve centers; tendencies

to abnormalities; signs of incipient illness; signs of fatigue and strain; the examination of children for hindrances to study and development. Professor Naismith.

PHYSICS.

Professor ———.
Associate Professor M. E. RICE.
Assistant Professor STIMPSON.
Mr. MCCOLLUM, Instructor.

EQUIPMENT.—For lecture purposes there are two lecture-rooms, each supplied with water, gas, and both direct and alternating currents. The apparatus available is sufficient to illustrate all the experiments usually given in college courses in physics and to show many of the more advanced experiments. There are three large general laboratory rooms and seven smaller rooms for special work, each supplied with water, gas and electrical power circuits. The apparatus in general physics is sufficient to enable each student to perform all the experiments usually described in laboratory manuals of college physics. For advanced work the equipment includes a good number of pieces of fine apparatus in heat, light and electricity. The department library contains the more important English, German and French periodicals, with bound volumes for thirty years or more. These include the *Philosophical Transactions* of the Royal Society, *The Philosophical Magazine*, the *Physical Review*, *Drude's Annalen und Beiblatter*, the *Journal de Physique*, *Science Abstracts*, *Sections A and B*, and a number of other journals, especially along the lines of applied electricity. The library also contains a good number of standard treatises, both elementary and advanced, as well as the collected papers of Maxwell, Faraday, Kelvin, Rowland, and others.

ADVICE AS TO CHOICE OF COURSES.—Courses 1, 2, 3 and 4 are general courses, 1 and 2 or 3 and 4 being prerequisite to the perusal of more advanced subjects; 7, 8, 9, 10 and 11 are major courses intended to follow those just named, and may be taken by either graduates or undergraduates; 12, 13, 14 and 15 are still more advanced courses, intended to form a cycle running through two years. Students intending to take advanced work in physics should also plan to take mathematics through calculus at least, and differential equations will be required for the last four courses above.

FOR UNDERGRADUATES ONLY.

1.—ELEMENTARY PHYSICS. Five hours, 1st term. Lectures and recitations, Monday, Wednesday, and Friday, at 9, and two two-hour laboratory periods per week, Monday and Wednesday, from 3:30 to 5:30, or Tuesday and Thursday, from 8 to 10. Open to students of the College and of the Medical School. This course is descriptive and experimental, and is intended for those who desire a general knowledge of the subject and who have had no previous work in physics. Prerequisites, algebra and geometry. Assistant Professor Stimpson.

2.—ELEMENTARY PHYSICS. Five hours, 2d term. A continuation of course 1, with the same schedule. Assistant Professor Stimpson.

Students who have received credit for entrance Physics, one unit, may take either or both of the above courses and receive three hours' credit each term.

3.—GENERAL PHYSICS. Five hours, 1st term, Monday, Tuesday, Wednesday, and Thursday, at 10:20 and 11:20, and one two-hour laboratory period per week. Open to all students of the College. This is a fundamental course of experimental lectures, recitations and problem working. Prerequisites, plane trigonometry and some knowledge of analytic geometry and calculus. Associate Professor M. E. Rice, Assistant Professor Stimpson, and Mr. McCollum.

4.—GENERAL PHYSICS. Five hours, 2d term. A continuation of course 3, with the same schedule and prerequisites. Associate Professor M. E. Rice and Assistant Professor Stimpson.

FOR ADVANCED UNDERGRADUATES AND GRADUATES.

7.—THEORY OF ELECTRICITY AND MAGNETISM. Three hours, 1st term, Monday, Wednesday, and Friday, at 9. Prerequisites, courses 1 and 2 or courses 3 and 4 and a fair knowledge of calculus. Associate Professor M. E. Rice.

Students electing course 7 should also elect a two-hour credit in course 8.

8.—ELECTRICAL MEASUREMENTS. Two or four hours' credit, four or eight hours per week, by appointment. This is a laboratory course, coördinate with course 7 and with the same prerequisites. Mr. McCollum.

9.—OSCILLATORY CURRENTS AND ELECTRO-MAGNETIC WAVES. Five hours, 2d term, by appointment. This course will consist of lectures and laboratory work, and will develop the principles

that underlie all work in wireless telegraphy. Prerequisites, courses 7 and 8. Associate Professor M. E. Rice.

10.—OPTICS. Five hours, 1st term, by appointment. Class and laboratory work. This course is intended to develop sufficient knowledge of theoretical and experimental optics to enable the student to understand and to use the modern methods of research by means of light, such as spectroscopic and interference methods. Prerequisites, courses 1 and 2 or 3 and 4 and some knowledge of calculus. Associate Professor M. E. Rice.

11.—THEORY OF HEAT. Three hours, one term, by appointment. Class and laboratory work. This course is descriptive rather than mathematical. Special attention will be paid to the study of energy relations, to delicate heat measurements, and to the measurement of high temperatures. Prerequisites, courses 1 and 2 or 3 and 4 and some knowledge of calculus. Professor ———.

12.—THE MATHEMATICAL THEORY OF SOUND. Five hours, one term, by appointment. Lectures. Professor ———.

13.—THE MATHEMATICAL THEORY OF HEAT. Five hours, one term, by appointment. Lectures. Professor ———.

14.—THE MATHEMATICAL THEORY OF LIGHT. Five hours, one term, by appointment. Lectures, outside reading, and the solving of special problems. Associate Professor M. E. Rice.

15.—THE MATHEMATICAL THEORY OF ELECTRICITY. Five hours, 2d term, at 9. Lectures, recitations, and the solving of special problems. The aim of this course is, first, to develop the ability to put physical problems in electricity into mathematical form, solve the resulting equations, and then interpret the results; second, to read selected portions of the more advanced treatises by Maxwell, Webster, Heaviside, and others. Associate Professor M. E. Rice.

PHYSIOLOGY.

Professor HYDE.
Demonstrator ———.

EQUIPMENT.—The physiological department is thoroughly equipped with approved modern apparatus for demonstration and experimental work. Besides a large lecture-room that seats 100 students, it possesses a department library for the use of the students, which contains the latest reference books and all of the best physiological journals. There is a large laboratory for the students of the College containing tables particularly de-

signed for their work. In this laboratory are, besides the needed instruments, digesters, spirometers, kymographs, manometers, and all kinds of electrical apparatus, a skeleton, and a finest French manikin. The research room is fitted up with necessary tables, instruments and electrical apparatus for any kind of physiological experiments. There is also a large preparation room, where most of the material is prepared, and a storeroom.

ADVICE AS TO CHOICE OF COURSES.—Course 1 is recommended especially to young women who intend to specialize in domestic science. Course 2 is designed for students who are preparing to teach.

1.—**PHYSIOLOGY AND HYGIENE.** (Open only to young women.) Five hours, 1st term, three days at 8 A. M. and two days from 8 to 10. The first half of the course is devoted to a study of the structure and functions of the human body, by means of lectures, recitations, demonstrations and laboratory experiments. The second half consists of the study of the elements of hygiene and applied therapeutics with special reference to home life. The first half is a general course, the second half is especially designed to be introductory to the more advanced work in domestic science. Open to Sophomores. Professor Hyde and Professor Naismith, Mr. Carter and Miss Walling.

2.—**PHYSIOLOGY.** Five hours, 1st term, daily, at 1:30. Laboratory work, recitations, lectures and demonstrations. A general elementary course in Physiology. Open to Sophomores. Professor Hyde, Mr. Carter and Miss Walling.

3.—**PHYSIOLOGY.** Investigation of special subjects. Open to Juniors and Seniors who have completed physiology 2. Five hours, either term or both, by appointment. Professor Hyde.

FOR ADVANCED UNDERGRADUATES AND GRADUATES.

6.—**PHYSIOLOGY.** Experimental physiology and original research. Open to Juniors, Seniors and Graduates who have taken not less than a year of anatomy and physiology and have given evidence that they are prepared for it. Five hours, either term or both, by appointment. Professor Hyde.

FOR GRADUATES ONLY.

7.—**PHYSIOLOGY.** Advanced experimental physiology. Open to graduates who have taken not less than a year of anatomy and have given evidence that they are prepared for it. Recitations and lectures, with demonstrations, conferences and journal club, and laboratory experimental work. Ten hours, 1st term (b), 8 to 12:15; 2d term, 8 to 11:15. Professor Hyde.

PSYCHOLOGY. (See Philosophy.)

PUBLIC SPEAKING AND DEBATE.

Associate Professor FRAZIER.
Mr. McCANLES.

EQUIPMENT.—Students in this department will find in the library the collected orations of the leading American orators from the early colonial period to the present time, all of the better-known English orators, and specimens of the oratory of Greece, Rome, and modern France and Germany. In addition, there is a representative list of the early and the more recent writers who deal with the theory of oratory. The students in debate have access to the economic, history and sociology seminar rooms in Spooner Library.

ADVICE AS TO CHOICE OF COURSES.—Work in this department is arranged to meet the needs of two classes of students: (1) Those who wish merely a preliminary training in the practice of public speaking and the principles of reading; and (2) those who desire to specialize to some extent in these subjects as preparation for professional life. The students of the first class should elect courses 1 and 2 during the Freshman or Sophomore years, and, if possible, course 7 or course 8 during the Junior or Senior years. The students of the second class should elect their courses in catalogue order, and consult with the instructor as to collateral courses to be pursued. All students contemplating taking work in this department are urged to join one of the literary societies of the University and to participate in the University debates, as supplementary to the classroom work.

Members of the University debating teams desiring credit for the work done in preparation should register for course 2 or 4—Freshmen and Sophomores for the former, Juniors and Seniors for the latter.

FOR UNDERGRADUATES ONLY.

1.—**PRINCIPLES OF SPOKEN DISCOURSE.** Three hours, both terms, Monday, Wednesday, and Friday, at 8, 9, and 10:15. Open to all students of the College. A course designed to be introductory and preparatory, rather than technical. Training in the theory of oratory, in the analysis and delivery of famous speeches, and in the construction and oral presentation of original speeches; drill in speaking from outline and in the use of manuscript. Lectures and required library reading. The enrolment in any section of this course is limited to twelve students. Associate Professor Frazier and Mr. McCanles.

2.—ARGUMENTS AND DEBATES. Two hours, both terms, Tuesday and Thursday, at 8, 9, and 10:15. Lectures and recitations on the principles of argumentation as applied to oral discussion. The work will consist of regular classroom debates conducted by affirmative and negative debating teams. The more simple questions will be chosen. Each side will submit its brief and write a forensic covering the argument of each debate. Should be preceded by course 1, although this is not necessary. Associate Professor Frazier and Mr. McCanles.

3.—ORAL DEBATES. Three hours, 1st term, Monday, Wednesday, and Friday, at 11:15. The object of this course is to give the student a more advanced training in debate. The fundamental principles of debating will be discussed in detail. Lectures will be given on the collecting and arranging of material. There will be weekly debates by the members of the class. Open to Juniors and Seniors who have had public speaking 2 or rhetoric 5 and 6. Associate Professor Frazier.

4.—ORAL DEBATES. Two hours, 2d term, Tuesday and Thursday, at 4:30. Advanced course. A thorough investigation of a limited number of subjects taken from the field of political economy, sociology, and history. Conferences, classroom discussion, and criticism. Open to Juniors and Seniors who have had public speaking 3. Associate Professor Frazier and Mr. McCanles.

5.—EXPOSITORY ADDRESSES. Two hours, 2d term, Tuesday and Thursday, at 11:15. A study of the form and requirements of the expository address. The subject-matter for the speeches in this course will be chosen from subjects in which the student has some settled interest. Open to Juniors and Seniors who have had public speaking 1. Associate Professor Frazier.

6.—READING ALOUD. Two hours, 1st term, Tuesday and Thursday, at 11:15. The aim of this course is to give the student suggestions and helps which will enable him to read aloud intelligently, simply, and with appreciation. There will be lectures and classroom drill. Associate Professor Frazier.

7.—FORMS OF PUBLIC ADDRESS. Three hours, 1st term, Monday, Wednesday, and Friday, at 11:15. The study and practice of the forms of demonstrative oratory—the eulogy, the after-dinner speech, political oratory, anniversary and commemorative addresses, nominating speeches, responses, and platform addresses. Library work covering the literature of the subject. Associate Professor Frazier.

8.—EXTEMPORE SPEAKING. Two hours, 2d term, Tuesday and

Thursday, at 10:15. The object of this course is to train the student to think and to speak on his feet. Special attention will be given, in the first place, to the construction of the speech, to the gathering and outlining of the material; and, in the second place, to the natural and effective delivery of the material thus arranged. Associate Professor Frazier.

ROMANCE LANGUAGES AND LITERATURES.

Professor GALLOO.

Associate Professor BASSETT.

Assistant Professor NEUEN SCHWANDER.

Assistant Professor SCHOCH.

Assistant Professor BOARDMAN.

Miss GRAFFIN, Fellow.

EQUIPMENT.—The department of Romance languages and literatures possesses a collection of illustrative material consisting of several hundred photographs, stereopticon slides, maps, plans, plaster casts, etc., representing historical features of French life, in costume, architecture, etc., as well as persons, places and things that have a closer and more definite relation to literature or to special literary works. The library of this department contains 3073 volumes, and receives ten French and two Spanish periodicals.

French.

ADVICE AS TO CHOICE OF COURSES.—The first five courses must be taken in the order indicated below.

Of the following courses, 6-10, students are required to elect at least three (which must include 8 and 9) before they can be admitted to any of the advanced courses.

The literature courses should, as far as possible, be taken in the catalogue order. It is recommended that they be accompanied by corresponding courses in mediæval or modern European history.

In order to take up the linguistic study of any of the Romance languages, it is essential that students be well-grounded in Latin. They should also have a reading knowledge of German.

Graduate work in this department presupposes acquaintance with elementary Spanish and Italian.

The head of the department will, on application, outline a course for students intending to specialize in, or teach, French.

FOR UNDERGRADUATES ONLY.

1.—ELEMENTARY FRENCH I. Grammar (Fraser and Squair) and easy reading. Five hours, 1st term, daily, at 8, 9, 10:15, or 1:30; also given in the 2d term, five hours, daily, at 8. Drill in pronunciation and forms. Open to all students who have had three years of Latin or three years of German. Professor Galloo, Assistant Professor Neuen Schwander, Assistant Professor Schoch, or Assistant Professor Boardman.

2.—ELEMENTARY FRENCH II. Five hours, 2d term, daily, at 8, 9, 10:15, or 1:30; also given in the 1st term, five hours, daily, at 8. A continuation of course 1. Reading of simple prose texts, with exercises in dictation and elementary composition. Professor Galloo, Assistant Professor Neuen Schwander, Assistant Professor Schoch, or Assistant Professor Boardman.

3.—MODERN FRENCH PROSE. Three hours, both terms—1st term, Monday, Wednesday, and Friday, at 9; 2d term, Monday, Wednesday, and Friday, at 8. Translation and reading of some works of Mérimée, George Sand, Anatole France, and René Bazin. Assistant Professor Neuen Schwander or Assistant Professor Boardman.

4.—COMPOSITION. Two hours, both terms, Tuesday and Thursday—1st term, at 9; 2d term, at 8. Written exercises intended chiefly as a grammatical review. Oral exercises. Dictation. May be taken in conjunction with course 3 or course 5. Assistant Professor Neuen Schwander, Assistant Professor Schoch, or Assistant Professor Boardman.

5.—FRENCH PROSE AND POETRY. Three hours, both terms, Monday, Wednesday, and Friday, at 11:15. Reading of representative works of the seventeenth, eighteenth and nineteenth centuries. Assistant Professor Neuen Schwander.

6.—COMPOSITION. Two hours, 2d term, Tuesday and Thursday, at 11:15. A continuation of course 4, intended to provide additional practice in writing and speaking French. Assistant Professor Neuen Schwander.

7.—CORNEILLE AND RACINE. Two hours, 2d term, Tuesday and Thursday, at 8. Reading of four or five of the greatest tragedies of each poet. Must be preceded by courses 4 and 5. Assistant Professor Boardman.

8.—MOLIERE. Three hours, 1st term, Monday, Wednesday, and Friday, at 11:15. Careful study of the more important

plays, rapid reading of the others; reports in French by members of the class. Professor Galloo.

9.—COMPOSITION AND CONVERSATION. Two hours, 1st term, Tuesday and Thursday, at 11:15. Practice in writing and speaking French. Professor Galloo.

10.—ADVANCED COMPOSITION. Two hours, 2d term, Tuesday and Thursday, at 11:15. Translation, original composition, and practice in speaking French. Must be preceded by course 9. Professor Galloo.

FOR ADVANCED UNDERGRADUATES AND GRADUATES.

11.—HISTORY OF EARLY FRENCH LITERATURE. Three hours, 1st term, Monday, Wednesday, and Friday, at 9. From the earliest times to the classic period. Lectures, recitations, and private readings. Professor Galloo.

12.—HISTORY OF MODERN FRENCH LITERATURE. Three hours, 2d term, Monday, Wednesday, and Friday, at 9. From the classic period to the present day. Lectures, recitations, and private readings. Professor Galloo.

13.—TEACHERS' COURSE. Five hours, 2d term, Monday, Wednesday, and Friday, at 11:15. Systematic review of the grammar from the point of view of the requirements of elementary instruction. Outlines of historical grammar. Study of methods of teaching languages, and practice in teaching. Open only to students who give evidence of fitness for the work. Professor Galloo.

14.—FRENCH LITERATURE OF THE SIXTEENTH CENTURY. Two hours, 2d term, by appointment. The Renaissance in French literature. The *Pléiade*. The beginnings of French classicism. Professor Galloo.

15.—FRENCH LITERATURE OF THE SEVENTEENTH CENTURY. Two hours, 2d term, by appointment. A study of the development of French literature from the Renaissance to the end of the reign of Louis XIV. Assistant Professor Boardman.

16.—FRENCH LITERATURE OF THE EIGHTEENTH CENTURY. Two hours, 2d term, by appointment. Special attention is paid to the life and works of Voltaire; study of Montesquieu, Rousseau, and the encyclopedists; the dramatists. Assistant Professor Neuen Schwander.

17.—THE ROMANTIC SCHOOL (1800-1835). Three hours, 1st term, Monday, Wednesday, and Friday, at 9. A study of the

rise of romanticism in France and of its characteristic products in poetry and the drama. Lamartine, A. de Vigny, and A. de Musset. Professor Galloo.

18.—THE ROMANTIC SCHOOL (1800-1835). Two hours, 2d term, Tuesday and Thursday, at 9. This is a continuation of course 15, and will be devoted especially to Victor Hugo's works. Professor Galloo.

19.—DEVELOPMENT OF THE FRENCH NOVEL. Two hours, 1st term, Tuesday and Thursday, at 9. A survey of the novel in the seventeenth and eighteenth centuries. Professor Galloo.

20.—DEVELOPMENT OF THE FRENCH NOVEL. Three hours, 2d term, Monday, Wednesday, and Friday, at 9. The novel in the nineteenth century, with special reference to the origin and growth of realism and naturalism. Professor Galloo.

21.—THE FRENCH DRAMA. Three hours, 2d term, Monday, Wednesday, and Friday, at 1:30. A study of the development of the theater in France from the origin to the period of Augier and Dumas fils. Lectures, recitations, and written reports. Assistant Professor Boardman.

22.—HISTORY OF THE FRENCH LANGUAGE. Three hours, 1st term, by appointment. Its rise from low Latin; the additions from other sources; its growth and modifications. Professor Galloo.

23.—OLD FRENCH. Two hours, 2d term, by appointment. An introduction to French philology. *Chrestomathie du moyen âge* (Paris et Anglois) or *Chrestomathie de l'ancien français* (Constans). Professor Galloo.

24.—OLD FRENCH. Two hours, 1st term, by appointment. A continuation of course 22. Reading of the *Extraits de la Chanson de Roland* (Gaston Paris), with special attention to the phonetic changes and the inflections. Professor Galloo.

FOR GRADUATES ONLY.

25.—OLD FRENCH. Three hours, 1st term. Phonology and morphology of old French, with some discussion of syntax. *Le Pèlerinage de Charlemagne à Jérusalem; Aucassin et Nicolette*. Must be preceded by courses 23 and 24 or their equivalents. Professor Galloo.

26.—PROVENÇAL. Two hours, 1st term, by appointment. Grandgent's *Provençale Phonology and Morphology* and Bartsch's *Chrestomathie Provençale*. Assistant Professor Schoch.

27.—MEDIÆVAL FRENCH LITERATURE. Three hours, 2d term, by appointment. From the first literary monuments to the Renaissance. Professor Galloo.

28.—MOLIERE. Three hours, 1st term, by appointment. Same course as 8, with additional requirements. Study of Molière; his life and surroundings; his plays—their sources and influence. One or more essays will be written, preferably in French. Professor Galloo.

Spanish.

FOR UNDERGRADUATES ONLY.

1.—ELEMENTARY SPANISH I. Five hours, 1st term, daily, at 9, 11:15, or 1:30; also given in the 2d term, at 2:30. An outline of grammar (Hills and Ford). Reading of short stories. Elementary composition. Open to all students who have had three years of Latin or three years of German. In addition, one year of French is recommended. Associate Professor Bassett, Assistant Professor Neuen Schwander, or Assistant Professor Schoch.

2.—ELEMENTARY SPANISH II. Five hours, 2d term, daily, at 9 or 1:30; also given in first term, at 2:30. Grammar and composition. Reading of easy modern prose: Carrión-Aza, Pérez Galdós, Palacio Valdés, etc. Associate Professor Bassett, Assistant Professor Neuen Schwander, or Assistant Professor Schoch.

3.—MODERN SPANISH. Three hours, 1st term, Monday, Wednesday, and Friday, at 1:30. Nineteenth century prose and verse: Alarcón, Caballero, Pereda, Valera, Núñez de Arce. Associate Professor Bassett.

4.—COMPOSITION. Two hours, first term, Tuesday and Thursday, at 1:30. Systematic practice in speaking and writing Spanish, Ramsey's *Lo Esencial del Lenguaje castellano*, and Spanish Grammar (selected lessons); Harrison's Spanish Correspondence. Must be preceded by course 2 or its equivalent, and may be taken to supplement course 3. Associate Professor Bassett.

5.—ADVANCED COMPOSITION. Two hours, 2d term, Tuesday and Thursday, at 2:30. A continuation of course 4, by which it should be preceded. It may be taken to supplement course 6. Associate Professor Bassett.

FOR ADVANCED UNDERGRADUATES AND GRADUATES.

6.—CERVANTES. Three hours, 2d term, Monday, Wednesday, and Friday, at 2:30. Study of *Don Quixote*, part I. Themes and special reports. Associate Professor Bassett.

7.—PICAROON SATIRE AND THE NOVELA. Three hours, 1st term, by appointment. *Lazarillo de Tormes*, Alemán, Cervantes (selections from the *Novelas ejemplares*), selections from *Guzman de Alfarache*. Spanish society in the sixteenth and seventeenth centuries. Associate Professor Bassett.

8.—THE CLASSICAL DRAMA. Three hours, 2d term, by appointment. Selected plays of Lope de Vega and Calderón. The evolution of the Spanish drama. Associate Professor Bassett.

9.—SPANISH LITERATURE OF THE NINETEENTH CENTURY. Two hours, 1st term, by appointment. A survey of Spanish romanticism and the contemporary novel. Fitzmaurice-Kelly's *Historia de la Literatura Española* (Bonilla ed.) Associate Professor Bassett.

10.—SPANISH LITERATURE OF THE GOLDEN AGE. Two hours, 2d term, by appointment. A survey of the sixteenth and seventeenth centuries (Cervantes, Lope, Calderón, and their contemporaries). Fitzmaurice-Kelly's *Historia de la Literatura Española*. Associate Professor Bassett.

11.—EARLY SPANISH. Two hours, 2d term, by appointment. Menéndez Pidal's *Manual de Gramática Histórica Española*; *Poema del Cid* (Menéndez Pidal ed.) and *Poema de Fernán González* (Marden ed.) Associate Professor Bassett.

Italian.

Students are advised to take, as preparation, courses 1 and 2 in French.

FOR UNDERGRADUATES ONLY.

1.—ELEMENTARY ITALIAN I. Three hours, 1st term, Monday, Wednesday, and Friday, at 1:30. Grammar. Reading, De Amicis's *Cuore*. Assistant Professor Schoch.

2.—ELEMENTARY ITALIAN II. Continuation of course 1. Three hours, 2d term, Monday, Wednesday, and Friday, at 1:30. Grammar, composition, and reading of modern authors. Assistant Professor Schoch.

3.—GRAMMAR AND READING. Two hours, 1st term, Tuesday and Thursday, at 1:30. This course may be taken in connection with course 1. Assistant Professor Schoch.

4.—WRITERS OF THE CINQUECENTO. Two hours, 2d term,

Tuesday and Thursday, at 1:30. Must be preceded by course 3.
Assistant Professor Schoch.

FOR ADVANCED UNDERGRADUATES AND GRADUATES.

5.—DANTE. Three hours, by appointment, 1st term. The *Divina Commedia*; its relation to the age, and its importance in the history of the Italian language and literature. Assistant Professor Schoch.

SANSKRIT.

(See Latin Language and Literature.)

SPANISH.

(See Romance Languages and Literatures.)

SOCIOLOGY AND ECONOMICS.

Professor BLACKMAR.

Associate Professor CONE.

Assistant Professor BOYNTON.

CLARENCE J. PRIMM, Fellow.

EQUIPMENT.—Instruction in the department of sociology and economics is conducted chiefly by lectures, and reading and investigation in the library, aided in certain courses by textbooks. The University library contains about 3000 volumes relating to the courses of instruction. All of the principal magazines treating of the work of the department are on file in the reading-room for the use of the students. In addition there are charts, maps, and outlines. A limited amount of investigation of social conditions is carried on.

ADVICE AS TO CHOICE OF COURSES.—Courses 1, 2, 3 and 4 lay the foundation of subsequent work in sociology, although it is possible for students who have studied either economics or history to take courses 5, 6, and 7. Courses 1, 2, 3 and 4 are designed to give a general knowledge of the subjects treated. Courses 5, 6 and 7 are for advanced work and are especially designed for those who desire to specialize in sociology.

Courses 8 and 9 are designed for a general survey of anthropology. They are general culture studies but also relate to other courses of sociology.

Economics 1 is an essential foundation to subsequent courses in economics. Economics 2 and 3 lay the foundation for economics 9, 10, 11, and 12. It is very desirable that students should consult with the instructors before choosing a group of studies in the department of sociology and economics, as there are five more or less distinct lines of work, namely, sociology

proper, ethnology, economic theory, economic history, and statistics and finance.

Sociology.

Courses 1 to 11, inclusive, are open to Juniors and Seniors of the College. These courses may also be taken by graduate students, with such additional work as may be required by the instructor.

FOR ADVANCED UNDERGRADUATES AND GRADUATES.

1.—ELEMENTS OF SOCIOLOGY. Three hours, 1st term, Monday, Wednesday, and Friday, at 1:30. This is a general course in the foundations and principles of sociology. It includes the careful survey of social origins, social evolution, social structure, social activities, and social organization. It is a study of the nature of society in its concrete forms from an evolutionary standpoint, and of the operation of social forces and social laws. Much attention is given to the causes which have produced society. A concrete study of a community is required of each student. Professor Blackmar.

2.—APPLIED SOCIOLOGY. Three hours, 2d term, Monday, Wednesday, and Thursday, at 1:30. In this course special attention is given to social ideals, social aims, and social achievements, the conditions and modes of social progress, and the subject of conscious social activity, social environment, the causes and effects of inequalities, the equalization of opportunities, and the advancement of justice; some phases of social ethics. Professor Blackmar.

3.—SOCIAL PATHOLOGY. Two hours, first term, Tuesday and Thursday, at 1:30. A general study of poverty, pauperism, crime, and social degeneracy, and their causes, prevention, and remedy; a study of the causes of epilepsy and insanity. Professor Blackmar.

4.—REMEDIAL AND CORRECTIVE AGENCIES. Two hours, 2d term, Tuesday and Thursday, at 1:30. Administration of charitable and correctional affairs; management of jails, reformatories, penitentiaries, and institutions for defectives and dependents; conditions of the slums and rural populations; housing of the poor; defects of social organization; methods of prevention of social degeneration; social sanitation. Each student is required to visit at least two social institutions and report on the same. Professor Blackmar.

5.—SOCIALIZATION AND SOCIAL CONTROL. Three hours, 1st

term, Monday, Wednesday, and Friday, at 2:30. This course is designed to give a thorough study in pure sociology. It has to do with social forces, social laws, and the origin and development of social control. It involves a study of aggregation, association, and coöperation, as well as social inequalities and methods of overcoming their evil effects. Professor Blackmar.

6.—PSYCHOLOGICAL SOCIOLOGY. Three hours, 2d term, Monday, Wednesday, and Friday, at 2:30. Origin, development and characteristics of the social mind; psychical activities; psychology of the crowd and the "mob"; psychology of political and social institutions. Professor Blackmar.

7.—SOCIAL AND ECONOMIC STATISTICS. Two hours, 2d term, Tuesday and Thursday, at 10:15. A practical course in social relation and social problems by the statistical method. Students are instructed in the technique of statistics and the scope and meaning of statistical inquiry. A practical knowledge is derived from the handling of statistical data and in the construction of statistical tables, tabulations, etc. By the preparation of diagrams, charts, etc., in the laboratory, the graphic method is also introduced. It is aimed to make the course a practical one by the study of such sociological phenomena as populations, vital statistics, birth-rates, marriage-rates, death-rates, divorce, immigration, migration, etc., and in the investigation of such economic subjects as prices, trade and internal commerce, agricultural and manufacturing growth, and such industrial activities as admit of statistical inquiry. Some knowledge of economics and sociology is desirable. (Not given in 1908-'09; alternates with economics 19.) Assistant Professor Boynton.

8.—GENERAL ANTHROPOLOGY. Three hours, 1st term, Monday, Wednesday, and Friday, at 3:30. The natural history of man. The probable origin and antiquity of man. Comparison with the anthropoid apes. Man's physical, mental and social characteristics. Methods of obtaining food, shelter and distribution over the earth. Evidences of Tertiary man. Relics of man found in the gravel drift, caves, and mounds. The beginnings of art and industry. The division of labor. The origin and development of language. Lectures and library work. (Not given in 1908.) Professor Blackmar.

9.—ETHNOLOGY. Two hours, 2d term, Tuesday and Thursday, at 3:30. Origin of races and ethnic groups. Racial differentiation and development. Characteristics of ethnic society. Why some ethnic groups survive and others become extinct. The

conflict and survival of races. Their geographical distribution. Influence of geographical and physical environment. Comparison of natural and civilized races. Classification of existing races. Modern race problems. Lectures and library work. (Not given in 1909.) Professor Blackmar.

10.—THE FAMILY. Two hours, 2d term, Tuesday and Thursday, at 2:30. The origin and growth of the family historically considered. The family as the unit of society. The relation of husband and wife and of parents and children. The economic basis of family life. The psychology of family life. The family as the type of society. Its importance in the preservation of society. The pathology of the family. The relation of the family to the general social organism, politically, religiously, and socially. Professor Blackmar.

11.—SOCIALISM. Two hours, 1st term, Tuesday and Thursday, at 2:30. The development of modern socialistic theories, including a study of French and German socialism. Modern socialistic tendencies and their causes. The development of social democracy. The limitations of industrial liberty. Government control and government ownership of industries. Professor Blackmar.

FOR GRADUATES ONLY.

12.—AMERICAN AND EUROPEAN CHARITIES. Five hours, by appointment. Research course. A study of charities administration in the United States and some of the principal cities of Europe. Personal investigation of American charitable institutions with special reference to methods of state control. Professor Blackmar.

13.—AMERICAN ETHNOLOGY. Three hours, by appointment. Research course in the natural races of America. Migration and geographical distribution of tribes. Comparative characteristics of tribes and ethnic groups. Government and organization of tribes. The beginnings of civilization, the food supply, and the progress in the industrial arts. (Not given in 1908-'09.) Professor Blackmar.

14.—PREPARATION FOR PUBLIC SERVICE. Three hours, 2d term, by appointment, Monday, Wednesday, and Friday. A study of the administration of charitable and penal institutions. The business administration of public affairs. Preparation for civil service. A research course in the library supplemented by the investigation of institutions by visitation. Lectures by experienced officials on institutional administration and practical

politics. For advanced students who desire to prepare for public service. Professor Blackmar.

Economics.

Courses 1 to 3, inclusive, are open to all students of the College. Courses 4 to 21 are for Juniors and Seniors, but may be taken also by Graduates, with the addition of such extra work as may be required by the instructor.

FOR UNDERGRADUATES ONLY.

1.—ELEMENTS OF ECONOMICS Five hours, daily, 1st term, at 3:30; repeated 2d term, at 3:30. This course endeavors to develop and explain the general laws of man's activity in the production, distribution and consumption of wealth. It serves, therefore, as the basis for a scientific understanding of industrial actions and relations, and as an aid to getting the fullest benefit from the following courses. Some of the main topics studied are: The nature and influence of economic wants; the nature and cause of value; the factors of production and their organization; the influences determining the shares of product distributed as rent, wages, interest, and profits. Associate Professor Cone.

2.—ECONOMIC HISTORY OF ENGLAND. Three hours, 1st term, Monday, Wednesday, and Friday, at 9. The object of this course is to trace and explain the general development of agriculture, industry and commerce in England. The period covered extends from the Saxon invasion to the present time, and special attention is given to early agriculture, early town life, merchant and craft guilds and other corporate privileges, and the rise of commerce, trade routes, markets, and fairs. Special industries and their effect on English life are traced. The agrarian revolution, the peasant's revolt, enclosures; the national policy in industry and trade, the mercantile system and its effect on English commerce, the great inventions of the eighteenth century, and the causes and nature of the industrial revolution, together with certain aspects of the English industrial supremacy of the past century, form the concluding features of the course. Assistant Professor Boynton.

3.—ECONOMIC HISTORY OF THE UNITED STATES. Three hours, 2d term, Monday, Wednesday and Friday, at 9. The study of the economic development of the United States from the earliest colonial times down to the present is undertaken in this course. Attention is given to colonial agriculture, industry, and trade. The effect upon American life of the westward expansion, the

economic significance of slavery in the South and in the country at large, the industrial development of the North prior to the civil war, and such important subjects as the history of the tariff, monetary legislation, the causes and effects of commercial crises, the development of railway transportation, the resources of the nation and the rise and importance of American manufactures will receive due attention. Finally, a survey will be made of the present industrial situation under corporate methods and of the outlook for democratic control of industrial conditions. Should be preceded by course 2. Assistant Professor Boynton.

FOR UNDERGRADUATES AND GRADUATES.

4.—MONEY AND CREDIT. Two hours, 1st term, Tuesday and Thursday, at 1:30. Training in economic reasoning and a systematic knowledge of the fundamental principles of currency in its various forms are the chief aims of this course. The principal forms of money and of credit, as developed in the experience of the principal countries, and as at present in use in various parts of the world, are studied. Must be preceded or accompanied by course 1. Associate Professor Cone.

5.—BANKING. Two hours, 2d term, Tuesday and Thursday, at 1:30. The principles of banking, and banking institutions, as the chief sources of credit in a readily usable form, are studied, both as to the principal historical steps in their development and as to their present forms and methods in different countries. The banking systems of the United States receive especial attention, including the suggestions for reform of the present organizations. Must be preceded by course 4. Associate Professor Cone.

6.—FINANCIAL HISTORY OF THE UNITED STATES. Three hours, 2d term, Monday, Wednesday, and Friday, at 2:30. This course will give a consecutive view of the experience of this country in providing mediums of exchange, in providing sources of government revenue, and in caring for and using the revenue. The laws of the United States in regard to currency, banking, public revenue, expenditure, and debt, the methods of administering those laws, and the resultant conditions, will be examined. The variety of this experience will furnish illustrations of the principles studied in courses 4, 5, and 7. Must be preceded or accompanied by course 1. Associate Professor Cone.

7.—PUBLIC FINANCE. Three hours, 1st term, Monday, Wednesday, and Friday, at 2:30. The theory of government expendi-

ture is studied, illustrated by some reference to the experience of various governments. The different sources of government revenue are examined, taxation receiving chief attention. The creation, management, refunding and extinguishment of public debt are discussed. Must be preceded by course 1. Associate Professor Cone.

8.—CORPORATE FINANCE. Two hours, 1st term, Tuesday and Thursday, at 2:30. The financial side of large business operations, as met with chiefly in corporations, is studied. Some of the topics considered are: The nature, advantages and extent of the corporate form of organization; the nature and relations of stocks and bonds in different forms; the methods pursued in marketing securities; the causes of stock-watering; the character and causes of recently revealed corporate corruption. All are examined with a view to giving a better understanding of frequently misunderstood corporate actions. Must be preceded by course 1. Associate Professor Cone.

9.—HISTORY OF COMMERCE AND COMMERCIAL GEOGRAPHY. Three hours, 1st term, Monday, Wednesday, and Friday, at 10:15. A brief survey is made of the commerce and trade routes of the ancient peoples surrounding the Mediterranean sea, of the effect of the crusades and of the stimulus given to mediæval commerce by the Italian cities and the Hanseatic League, the position of the trader and the merchant, together with the commodities of early commerce; the restrictions, monopolies, trading companies and national policies with reference to trade are also discussed. The effects on Europe of the period of discovery and colonization are also traced. The development of the commerce of the separate nations is concluded to the present time, the policies they have pursued in securing it, and the natural advantages each possesses in the competition of the world market. Considerable attention is devoted to the sources of raw materials, to the location of the demand and supply of finished products, and to the governmental activities to stimulate national prestige along commercial lines. Should be preceded by courses 1 to 3, inclusive. Assistant Professor Boynton.

10.—ECONOMIC RESOURCES AND ACTIVITIES OF EUROPEAN COUNTRIES. Two hours, 2d term, Tuesday and Thursday, at 9. The studies of the natural resources of industrial nations and their present economic life and activity will be the subject-matter of this course. The present condition of agriculture, mining, manufacturing, and industry in general, together with

the internal trade and foreign commerce of each country, will be investigated and the governmental policies designed to encourage industry and trade will also be a feature of the course. Finally, the trade relations of these countries among themselves and with other nations and their competition for the markets of the world will conclude the investigation of the subject. Should be preceded by courses 1 to 3, inclusive, or course 9. (Given in 1908-'09; alternates with economics 20.) Assistant Professor Boynton.

11.—HISTORY AND DEVELOPMENT OF TRANSPORTATION. Two hours, 1st term, Tuesday and Thursday, at 11:15. Primitive and improved methods of transportation are studied in their economic aspects. The historical development of the canal and the railway and their relation to each other and to society in this and other countries are traced. Special attention is given to this development in the United States. This course is designed as preparation, in part, for course 12, and should be preceded by courses 1 to 3, inclusive, and course 9. Assistant Professor Boynton.

12.—RAILWAY RATES AND GOVERNMENT REGULATION. Three hours, 2d term, Monday, Wednesday, and Friday, at 11:15. This course involves a study of the theory of railway rates, competition in transportation, and the problems of local and individual discrimination. State interference, regulation and ownership receive attention. The experience of state railway commissions and the work of the Interstate Commerce Commission will be reviewed, and the efforts by recent legislation, state and national, to deal with the problems arising in connection with transportation will conclude the course. This course should be preceded by course 11. Assistant Professor Boynton.

13.—HISTORY OF TRADE-UNIONISM AND LABOR ORGANIZATION. Three hours, 1st term, Monday, Wednesday, and Friday, at 11:15. The growth and nature of labor organizations since the appearance of a distinct wage-earning class in society will be traced. Special consideration will be given to the growth of trade-unionism in England during the past 100 years, and to the more recent development of the labor movement in the United States, Germany, and Australasia. Methods of remuneration, viz., coöperation, profit-sharing, and the wages system, receive attention; likewise the teaching and bearing of economic theory on the question of wages and the laboring class. This course should be preceded by courses 1 to 3, inclusive. Assistant Professor Boynton.

14.—PRESENT LABOR PROBLEMS. Two hours, 2d term, Tuesday and Thursday, at 11:15. This course has to do with present-day problems connected with labor—the problems arising from the existence of a laboring class and an employing class. Their mutual relations and the natural difficulties arising between them are considered, and the effects of these relations and of the often conflicting interests, not only upon the two parties, but upon the public as well, will receive due attention. This course should be preceded by course 13. Assistant Professor Boynton.

15.—INSURANCE. Two hours, 2d term, Tuesday and Thursday, at 2:30. The general economic nature of risk is pointed out, risks are classified, and those falling in the insurable class are given especial attention. The different groups of insurance—marine, fire, life—and various newer extensions of the principles to other kinds of risks, are treated. The various forms of insurance organization, as stock companies, mutual and fraternal organizations, and various modifications of these, are considered. Must be preceded by course 1. Associate Professor Cone.

16.—ACCOUNTING. Two hours, 2d term, Tuesday and Thursday, at 2:30. The object of this course is to develop the economic principles underlying the so-called higher accounting, which aims to give at all times a true and complete, but condensed, representation of the real condition of the particular business to which it is applied. In order to succeed in this, it must be based upon the most careful economic analysis. Some typical illustrations, taken from the practice of large corporations, will be studied. This course is closely related to course 8. Must be preceded by course 1. Associate Professor Cone.

17.—ECONOMIC THEORY, TO ADAM SMITH. Two hours, by appointment. The growth of thought about economic matters in ancient, mediæval and modern times, down to about the end of the eighteenth century, is studied, chiefly from the works of the original writers, although the histories and commentaries are not ignored. This study furnishes many points for suggestive contrast and comparison between earlier and later theories, and explains many otherwise incomprehensible features of modern economic theories. Must be preceded by course 1. Associate Professor Cone.

18.—ECONOMIC THEORY, SINCE ADAM SMITH. Two hours, by appointment. The extensive and important economic literature

of the nineteenth century is the subject-matter of this course. The important economists are all studied at first hand, and occasional attention is given to the works of minor writers, in cases where their writings contain important germs of theories later developed by others of greater prominence. This course serves not only to explain the growth of present views but also to give a fuller body of economic doctrine than can be given in course 1. Must be preceded by course 1. Associate Professor Cone.

19.—ECONOMICS OF AGRICULTURE. Two hours, 2d term, Tuesday and Thursday, at 10:15. A course in the economics of agriculture, with special reference to American conditions. Attention will be directed to the settlement of the public domain, to the policy of the government in securing this end, to the present efforts of the government in reclaiming waste areas by irrigation, and to the organized work and coöperation of the Department of Agriculture. The peculiar natural advantages of various sections and their opportunities for cheapened transportation, the statistics of crop production, together with the markets at home and abroad for agricultural products and the competition encountered, will be features of the course. The important subjects of land values, rents, and taxation, in their special bearing on agricultural lands, likewise find a place in this course. (Given in 1908-'09; alternates with sociology 7.) Assistant Professor Boynton.

20.—BUSINESS ORGANIZATION AND MANAGEMENT. Two hours, 2d term, Tuesday and Thursday, at 9. Alternates with economics 10. Designed for advanced students in economics and sociology who desire to make special preparation for business life. The course treats of methods of general business organization and management as well as the organization of the business of the bank, the factory, and the general office. The organization and working of the industrial and commercial corporation will be given special consideration. Attention will be given to special examples of industries as types to illustrate the forms of modern business organizations and methods. The extractive, manufacturing and commercial forms of business activity will be investigated, together with their accompanying financial mechanism of exchange, credits, speculation, and the various devices created by the men of affairs for the effective prosecution of modern business. (Not given in 1908-'09.) Assistant Professor Boynton.

21.—SEMINAR OF SOCIOLOGY AND ECONOMICS. Two hours,

each term, by appointment. This is a research course for advanced students. Applicants for admission to the seminar must satisfy the instructors of their preparation and ability to undertake original investigation. Each student must pursue a definite line of work under the direction of one of the instructors. Professor Blackmar, Associate Professor Cone, and Assistant Professor Boynton.

ZOÖLOGY.

Professor McCLUNG.

Professor DYCHE.

Professor HUNTER.

Assistant Professor BAUMGARTNER.

Miss NOWLIN.

Mr. ROBERTSON.

Mr. CLARK, Fellow.

EQUIPMENT.—The department is in the possession of ample facilities in the way of specimens and apparatus for the presentation of the courses outlined below. The historical development of vertebrate life is made teachable by the large paleontological collection in the museum. Representative types of invertebrates from the Atlantic and Pacific coasts, as well as from Bermuda, make possible the thorough treatment of almost any of the lower orders. Histological, cytological and embryological material of great variety has been provided. Microscopes, microtomes and other apparatus necessary for even the most advanced work are at hand. The well-equipped preparation rooms make instruction in the museum very thorough.

ADVICE CONCERNING CHOICE OF COURSES.—Course 1 is designed as an introduction to the subject, and, so far as possible, gives a general survey of the animal kingdom. The character of the work is such as to lay particular stress upon training in the independent observation and correlation of facts. It is, therefore, a course which may be taken by those who wish merely to gain a general idea of zoölogy and to become acquainted with the methods of scientific work. As an elementary course it forms a basis for any advanced work, and is required for entrance into the other courses, except 7. Taken with course 1 in botany, it completes a year's training in elementary biology.

Courses 2 and 3 logically follow course 1, and should be taken by those who desire a more comprehensive view of the subject than can be gained in a half-year's study. While more advanced in character than the first course, they are not too technical for the general student. They should be taken by all wishing to continue in the more advanced courses.

Course 4 may be taken with advantage by students who have had course 1, or preferably 1 and 2, and who expect to teach zoölogy in the high school without making a specialty of the subject.

Course 5 is the last of the general courses, and completes the work of preparation desirable for students who wish to take up a detailed study of zoölogy in more or less limited fields. It may follow courses 1 and 2 in the case of students who choose to enter directly into systematic work.

Students contemplating the study of medicine are recommended to take not less than ten hours of work in zoölogy. Arrangements will be made to provide such students with as much comparative anatomy as possible. Consultation should be had with the head of the department, early in the course, for the purpose of arranging the work.

In all cases students are urged to secure during their Freshman and Sophomore years as much training as possible in physics, chemistry, botany, and the modern languages.

FOR UNDERGRADUATES.

1.—ELEMENTARY ZOÖLOGY. Five hours, 1st term, 1:30 to 3:30. A course in the general principles of zoölogy. The work consists of a laboratory study of type specimens, together with lectures upon classification, habits, distribution, etc. Open to all students of the College. Professor McClung, Assistant Professor Baumgartner, Miss Nowlin, and Mr. Robertson.

2.—INVERTEBRATE MORPHOLOGY. Five hours, 2d term, 10:15 to 12:15. A continuation of the work begun in course 1, pursued, however, in a more thorough and detailed way. In this division the lower invertebrates will be studied. Open to all students of the College who have had course 1. Miss Nowlin.

3.—CHORDATE MORPHOLOGY. Five hours, 2d term, 1:30 to 3:30. A course dealing with the chordates, and designed especially for students preparing for the study of medicine. Assistant Professor Baumgartner and Mr. Robertson.

4.—TEACHERS' COURSE. 1st term, daily, 3:30 to 5:30. A course in zoölogy for those who expect to teach. Methods used in collecting, preserving and preparing specimens for the museum and classroom. Methods of instruction. Open to all who have taken courses 1 and 2 or their equivalent. Professor Dyche.

5.—SYSTEMATIC AND DESCRIPTIVE ZOÖLOGY. Throughout the year, 3:30 to 5:30. Lectures, with exhibition of specimens. Laboratory work in systematic zoölogy. Open to Juniors, Se-

niors and Graduates who have taken courses 1 and 2. Professor Dyche.

6.—FIELD-WORK AND LIFE-HISTORIES. Three hours, 2d term, Monday and Friday, at 3:30, and Saturday morning. A systematic and ecological study of the local fauna. Open to Juniors and Seniors who have had courses 1 and 2 or equivalent. Assistant Professor Baumgartner.

7.—HISTORY AND PHILOSOPHY OF ZOÖLOGY. One hour, 2d term, Monday, at 11. A course dealing with the development of the science of zoölogy. In this course consideration will be given to the large movements that have led up to the present form of the science, and to the general principles that have been evolved. Open to Juniors and Seniors in the College. Professor McClung.

8.—HISTOLOGY, OR MICROSCOPIC ANATOMY. Five hours, 1st term, 3:30 to 5:30. Microscopical manipulation, the study of normal tissues and the methods of preparing mounted objects are presented in this course. Lectures and laboratory work. Open to Juniors, Seniors and Graduates who have taken courses 1 and 2 or equivalents. Assistant Professor Baumgartner.

9.—CYTOLOGY, OR CELLULAR BIOLOGY. Five or ten hours, throughout the year, by appointment. A course in cell structure and development. Lectures and laboratory work. Open to Juniors, Seniors and Graduates who have taken courses 1 and 2. Professor McClung.

10.—EMBRYOLOGY. Five hours, 2d term, by appointment. The ontogeny of the chick, shark, etc. Open to Juniors, Seniors and Graduates who have taken course 7 or 8. Professor McClung.

11.—PALEOZOÖLOGY. Five hours, by appointment. A course dealing with the succession of animal life upon the earth. Open to Juniors, Seniors and Graduates who have had courses 1 and 2. Geology 1 is recommended as further preparatory work. Professor McClung.

12.—ECHINODERMS. Five hours, by appointment. This course deals with the development and morphology of echinoderms. Open to Juniors, Seniors and Graduates who have taken courses 1 and 2. Professor Hunter.

13.—VERMES. Five hours, by appointment. The development and morphology of vermes. For those who intend to study medicine, special attention is given to parasitic forms. Open to Juniors and Seniors who have had courses 1 and 2. Professor Hunter.

14.—SEMINAR. One or two hours, 1st and 2d terms. An opportunity is offered a limited number of sufficiently prepared students to take up the literature of important researches upon special topics or upon general biological problems. The results obtained must be embodied in carefully prepared papers and given in the form of lectures.

FOR GRADUATES ONLY.

15.—ADVANCED ORIGINAL WORK IN MORPHOLOGICAL ZOÖLOGY. Five or ten hours, throughout the year, by appointment. Professor McClung.

16.—ADVANCED ORIGINAL WORK IN SYSTEMATIC AND DESCRIPTIVE ZOÖLOGY. Five or ten hours, throughout the year, by appointment. Professor Dyche.

17.—ADVANCED ORIGINAL WORK IN HISTOGENESIS AND ORGANOGENESIS. Five or ten hours, throughout the year, by appointment. Professor McClung.

18.—ADVANCED ORIGINAL WORK IN CYTOLOGY. Five or ten hours, throughout the year, by appointment. Professor McClung.

19.—ADVANCED ORIGINAL WORK IN VERTEBRATE PALEONTOLOGY. Five or ten hours, throughout the year, by appointment. Professor McClung.

20.—MUSEUM WORK AND METHODS. Five or ten hours, by appointment. Professor Dyche.

21.—COMPARATIVE ANATOMY AND OSTEOLOGY. Five or ten hours, by appointment. Professor Dyche.

Students desiring to do graduate work in the department must be able to read French and German, and must have special preparation for the work they wish to undertake. It is recommended that at least twenty hours' work be offered for the major requirement of the master's degree.

III. SCHOOL OF ENGINEERING.

FACULTY.

- FRANK STRONG, Ph. D., President.
- FRANK O. MARVIN, A. M., Dean, Professor of Civil Engineering.
- EPHRAIM MILLER, Ph. D., Professor of Mathematics and Astronomy.
- WILLIAM H. CARRUTH, Ph. D., Professor of Germanic Languages.
- EDGAR H. S. BAILEY, Ph. D., Professor of Chemistry and Metallurgy.
- LUCIEN I. BLAKE, Ph. D., Adjunct Professor in the Department of Electrical Engineering.
- EDWIN M. HOPKINS, Ph. D., Professor of Rhetoric and English Language.
- ERASMUS HAWORTH, Ph. D., Professor of Physical Geology and Mineralogy.
- EUGENIE GALLOO, A. M., Professor of Romance Languages and Literatures.
- HENRY B. NEWSON, Ph. D., Professor of Mathematics.
- PERLEY F. WALKER, M. M. E., Professor of Mechanical Engineering.
- ROBERT K. DUNCAN, A. B., Professor of Industrial Chemistry.
- ELMER F. ENGEL, A. M., Associate Professor of German.
- HAMILTON P. CADY, Ph. D., Associate Professor of Chemistry.
- MARTIN E. RICE, M. S., Secretary. Associate Professor of Physics and Electrical Engineering.
- WILLIAM C. HOAD, B. S., Associate Professor of Civil Engineering.
- FRANK E. WARD, Superintendent of Fowler Shops.
- JOHN N. VAN DER VRIES, Ph. D., Associate Professor of Mathematics.
- B. J. DALTON, B. S., Associate Professor of Railway Engineering.
- CLINTON M. YOUNG, B. S., Associate Professor of Mining Engineering.
- HERBERT A. RICE, Associate Professor of Civil Engineering.
- RALPH E. BASSETT, A. M., Associate Professor of Spanish.
- ALBERTA L. CORBIN, Ph. D., Assistant Professor of German.

- FREDERIC N. RAYMOND, A. M., Assistant Professor of English.
RICHARD M. FREEMAN, E. E., Assistant Professor of Electrical Engineering.
GEORGE J. HOOD, B. S., Assistant Professor of Mechanical Drawing.
DAVID F. MCFARLAND, A. M., Assistant Professor of Chemistry.
CHARLES H. ASHTON, A. M., Assistant Professor of Mathematics.
ALBERT K. HUBBARD, Ph. B., Assistant Professor of Civil Engineering.
CHARLES I. CORP, B. S., Assistant Professor of Mechanical Engineering.
EDWIN F. STIMPSON, B. S., Assistant Professor of Physics.
JAMES D. NEWTON, M. E., Assistant Professor of Civil Engineering.
LOUIS E. SISSON, A. B., Assistant Professor of English.
CHARLES H. GRAY, Ph. D., Assistant Professor of English.
HENRY O. KRUSE, A. M., Assistant Professor of German.
ELISE NEUEN SCHWANDER, A. B., Assistant Professor of French.
FRANCIS W. BUSHONG, S. D., Assistant Professor of Chemistry.
DANIEL L. THOMAS, Ph. D., Assistant Professor of English.
CHARLES OSHWALD,* B. S., Assistant Professor of Mechanical Engineering.
HENRY L. JACKSON, B. S., Assistant Professor of Chemistry.
JAMES E. TODD, A. M., Assistant Professor of Geology and Mineralogy.
ELIOT BOARDMAN, A. B., Assistant Professor of Romance Languages.
ROBERT D. LANDRUM, B. S., Assistant Professor of Chemistry.
FRANK E. JONES, Assistant Professor of Pattern-making.
LULU GARDNER, A. B., Assistant Professor of English.
GEORGE W. HANSON, Forge Instructor.
ULYSSES G. MITCHELL, A. B., Instructor in Mathematics.
ARTHUR D. PITCHER, A. B., Instructor in Mathematics.
JAMES A. CAMPBELL, A. M., Instructor in German.
EDWARD M. BRIGGS, A. B., Instructor in German.
SAMUEL MOORE, A. B., Instructor in English.
BURTON MCCOLLUM, Instructor in Physics.
GRACE A. HAYWARD, A. B., Assistant Instructor in English.
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* For year 1907-'08.

PURPOSE OF THE SCHOOL.

The School of Engineering is the scientific or technical school of the University. It offers what is, in the main, technical training in the various departments of engineering—civil, electrical, mechanical, mining, and chemical. The course of study in each of these branches of engineering is designed first of all to furnish a broad and thorough training in mathematics, mechanics, drawing, and physical science, the fundamental subjects on which the more professional subjects are based. The five courses are nearly identical up to the end of the Sophomore year, but differ considerably thereafter, each emphasizing the subjects peculiar to itself and giving as much technical training as is consistent with the thorough inculcation of sound theory.

DEGREES.

All courses in the School of Engineering lead to the degree of bachelor of science.

All work for higher degrees is under the supervision of the Faculty of the Graduate School. For the regulations governing the granting of advanced degrees, see announcements under the head of "Graduate School," and for the work open to graduate students, see "Courses of Instruction," as given in the catalogue under "The College."

ADMISSION.

There are two methods of admission to the School of Engineering of the University: First, by examination; second, by certificate.

1. BY EXAMINATION.

Times and place of examination for admission to the School of Engineering are the same as for admission to the College. Candidates may divide the examination between two years, as noted.

2. BY CERTIFICATE.

Nearly all students enter the School of Engineering by certificate from high schools, academies, preparatory schools of other colleges and universities, or from military schools, accredited by the University. The candidate for admission by certificate must present either a certificate or other credential,

as noted in connection with admission to the College. The same rules apply in regard to admission by certificate to the School of Engineering as apply for admission to the College.

DEFICIENCIES AND UNITS OF ADMISSION.

The candidate may be admitted to the Freshman class although deficient in some of the requirements as laid down below, provided such deficiency does not exceed three units, and that not more than one unit be required in any one subject. All deficiencies must be made good within such time as may be fixed in each individual case by the Dean of the School of Engineering.

Applicants for admission are advised to come without deficiencies, and to be especially well prepared in algebra and geometry.

An entrance unit represents five periods a week, of not less than forty minutes each, for thirty-five weeks. A unit in the School of Engineering represents five periods a week for a half-year. In making up deficiencies in University classes, one School of Engineering unit is counted as equivalent to one entrance unit.

SUBJECTS FOR ADMISSION.

Fifteen units are required for admission.

REQUIRED.		OPTIONAL.	
Mathematics 1, 2, 3, algebra and plane and solid geometry	3 units.	Latin 1, 2, 3,	3 units.
English 1, 2, 3,	3 "	German 1, 2, 3,	3 "
Physics	1 "	French 1, 2, 3,	3 "
Free-hand drawing	1 "	Greek and Rom. hist.	1 "
Foreign language — may be French or German or Latin; 3 units of one, or 2 units of any one and 1 unit of any other,	3 "	English history	1 "
		American history	1 "
		Chemistry	1 "
		Higher algebra and plane trigonometry	1 "
		Physical geography	1 "
		Botany	1 "
		Zoölogy	1 "
		Economics	1 "
		Manual training	1 "
Required,	11 units.		
Optional,	4 "		
Total,	15 units.		

Four units must be chosen from the optional list.

COLLEGE CREDIT.

College credit for work in preparatory schools will be given upon examination only. For times and place of such examination, see the College catalogue.

ACCREDITED SCHOOLS.

The list of schools accredited to the School of Engineering is practically the same as that of schools accredited to the College.

ADMISSION TO ADVANCED STUDIES.

For any advanced rank, the applicant must have completed all of the studies of the course below the rank for which he applies, including the entrance requirements, or their substantial equivalent, as determined by the committee on advanced standing. Application for credits in single subjects will also be passed upon by this committee, in connection with the Dean of the Engineering School.

SPECIAL STUDENTS.

Opportunity is given in the School of Engineering for the admission of persons of mature years who desire to pursue some special line of work, without following any prescribed course or becoming candidates for a degree.

The admission of such special students is directly under the control of the Dean of the School of Engineering, whose certificate of acceptance must be presented to the Registrar before registration. Applicants for standing as special students must present satisfactory evidence of proper preparation for the studies desired, and must also meet other requirements as fixed by the Faculty.

Special students are subject to the same regulations as regular students with regard to the quality of work performed and attendance at recitations and examinations, but not as to number of studies to be pursued.

REGISTRATION AND ENROLMENT.

All candidates for admission to the School of Engineering having high-school certificates, and all students intending to pursue their studies in the ensuing year, must present themselves for registration at the University on September 16 to 19, inclusive, 1908. Registration at a later date will be permitted only on the presentation of a satisfactory reason for the delay.

Registration may be completed through the mails on and after August 1st by forwarding to the Registrar a certified transcript of preparatory work and a check covering the entrance fees, made payable to Edward E. Brown, Secretary.

The Dean of the School of Engineering is charged with the execution of all University and Faculty rules relating to the enrolment of students in classes and their choice of studies.

Upon registration, each student will receive from the Registrar a certificate of his standing, which he will present to the Dean of the School, who is charged with the duty of enrolment of students in classes, the selection and arrangement of subjects, and the assignment of hours.

At least two weeks before the close of any term, each student then in attendance must present his application for enrolment for the term following to the Dean, whose approval of the work selected is a necessary condition for admission to classes.

INADEQUATE PREPARATION.

When students show by their current work insufficient entrance preparation in any study, they may be required to make good such deficiency in any manner prescribed by their instructors.

GRADES AND FAILURES.

Examinations are held at regular stated periods and at such other times as may be provided for by the regulations of the Faculty. At the close of each term, a summary of the student's work is reported to the Registrar, for entry upon the general record. At the end of each half-year, the parent or guardian of each student will be furnished, on request, a copy of the entries relating to that student.

Absence from examination or failure in more than one-third of his work, in any one term, severs a student's connection with the University, which can only be renewed through the consent of the Dean of the School.

Any withdrawal from school or from any class must be authorized by the Dean; otherwise such absence will be construed as failure.

EXPENSES.

By legislative enactment, each student from the state of Kansas in the School of Engineering must pay a matriculation fee of five dollars (paid but once, on entrance), and a yearly incidental fee of ten dollars. Non-residents of Kansas must pay a matriculation fee of ten dollars, and an incidental fee of twenty dollars.

SHOP AND LABORATORY SUPPLIES.

All the laboratories of the University and their equipment of power, engines, machinery, light, desks, tables, balances, microscopes, models and complete apparatus are at the disposal of the students, under the direction of their instructors. These desks, benches and tables will be further provided with individual sets of tools, sets of working apparatus, and equipment, for which the student will be held responsible and expected to return in good condition. Students are requested to check these up at time of entering a laboratory course to see that they get all that are charged to them. At the end of the course, or at the discretion of the instructor, all the individual equipment in good order must be returned. Such as may have been lost, damaged, broken or destroyed by the student must be paid for by him at that time. Material of every kind consumed, ground up or used in the manifold experiments and practices in the laboratories must be paid for by the student. For the economic and prompt supply of such material, coupon books, good in all departments, are furnished at the business office, in amounts of five dollars and two dollars. Any coupons unused are redeemable in cash at the Secretary's office at the end of the course.

SUMMER FIELD-WORK.

No fee will be charged for the use of instruments in summer field-work. Each student will be charged the actual cost of living, and incidental expenses.

OTHER EXPENSES.

There are no dormitories connected with the University. Students find accommodations in the boarding-houses and homes of Lawrence. Information concerning the location of rooming- and boarding-places may be had at the office of the Registrar.

The average price of board, rooms, light and fuel may be placed at from \$4 to \$4.50 a week. Some persons who furnish

plain rooms and good, plain food receive boarders at \$3 and \$3.50 a week. Day board in private families and at city restaurants may be obtained for \$3 to \$4 a week. Day board in clubs varies from \$2.75 to \$3.50 a week. Furnished rooms, usually occupied by two students, range from \$4 to \$15 a month. Unfurnished rooms rent for \$1.50 to \$3 a month. Students who can supply their own furniture and buy and prepare provisions for the table themselves can attend the University for very little cost in money.

The following table shows the estimated expenses of a student of the University for a year, excluding clothing and traveling expenses; the expense varies with the course pursued, and also depends upon the tastes and habits of the student:

	<i>Low.</i>	<i>Average.</i>
Board	\$120 00	\$160 00
Room	20 00	40 00
Books and stationery.....	8 00	15 00
Laundry	8 00	20 00
Matriculation and other fees...	15 00	15 00
Incidentals	15 00	50 00
Totals	\$186 00	\$300 00

SELF-HELP.

Many students find work in private families, in offices, and in various occupations, by means of which they defray a portion of their expenses. Some students have earned their entire expenses while in attendance, and have made good records at the same time; other students have done so much work that they have not been able to keep up their studies, and have thus missed the one thing for which they came. If it is possible for the student to have a part of his expenses paid, he should not attempt to earn his way entirely by his own exertions. The University cannot guarantee work to any student, but will lend every possible assistance in finding employment. The University Christian Associations maintain employment bureaus, where the names of those seeking work and of those desiring workers are recorded. Students desiring to help themselves are advised to apply early to the University Y. M. C. A. or to the Registrar, University of Kansas, Lawrence.

PROGRAM OF STUDY.

LEADING TO THE DEGREE OF BACHELOR OF SCIENCE.

The courses of study in the School of Engineering are almost entirely required. The work is in the main technical, and requires preparation of a high order, especially in mathematics. It also requires continuous effort in the courses themselves, which call for the entire time of the student to satisfactorily succeed.

The work of the Freshman year is common to all students of the School of Engineering, so that a choice between the several lines of engineering need not be made until after a year's experience with college life. As a further aid in making an intelligent choice, the general aims of the several courses are here briefly stated.

CIVIL ENGINEERING.

The first aim is to impart as broad a scientific training as the length of the course and the essential professional studies will allow, so that as many avenues to successful service as possible may be open to the graduate. Along professional lines, emphasis is laid first on work in surveying and field methods, as these are of special value to young engineers; second, on mechanics and its applications to the designs of roofs and bridges and other structures; third, on railway location and construction; fourth, on hydraulics and its applications to irrigation and canal work; fifth, on sanitary and municipal engineering, including water-supply, sewerage, and roads and pavements. Stress is placed on the study of principles, as being the things not likely to be acquired in after-life.

ELECTRICAL ENGINEERING.

The course in electrical engineering is designed to train the student in those fundamental principles of applied mathematics, chemistry, mechanics and electricity which form the basis of all successful specialization. The laboratory and shop work is arranged to develop and to encourage individual skill and ingenuity. Such experience in practical work as is possible is also included. The thesis involves original investigation.

MECHANICAL ENGINEERING.

In addition to the fundamental sciences common to all branches of engineering, this course offers professional work for students wishing to specialize in steam and gas engineering or mill engineering.

For the first branch the special work includes the designing of steam- and gas-engines and steam-turbines, and a study of methods of power distribution and application by both mechanical and electrical means. Complete power-plant designs are made, both for the generation of electrical power and for direct use in manufacturing plants, and students become familiar with all forms of steam, gas, air-compressing, hydraulic and electrical machinery through their study and operation in the laboratories.

For mill engineering, the special work includes the designing of mill or shop buildings, traveling cranes, etc., and power-distribution systems. It is intended to suit the needs of prospective engineers and managers of manufacturing plants of all kinds.

MINING ENGINEERING.

The object of the course in mining is to qualify students for future work in prospecting, mining, milling, and smelting, in accordance with modern scientific principles. In adopting the course of study, it was endeavored to include a sufficient requirement in language work to give the student a good knowledge of English, French, and German, and to adjust the various essential subjects—mathematics, engineering, chemistry, metallurgy, mining, mineralogy, and geology—so that upon the completion of the course one may be well qualified for specializing along any line which his future life may make desirable.

CHEMICAL ENGINEERING.

This course affords students an opportunity to specialize in chemistry, and to fit themselves for positions as chemists, managers or superintendents of manufacturing plants where the work is based on chemical science. This would include such industries as that of iron, zinc, gold and silver smelting and refining, the making of fertilizers, clay-working, sugar-refining, dyeing, bleaching, gas-making, cement-making, and general chemical manufacture. This course is broad enough for general training, and may be made special enough for technical work.

WORK IN COMMON.

FRESHMAN YEAR.

All students of the School of Engineering have work in common during the Freshman year, the differentiation between courses occurring in the Sophomore year. In the statement of courses below, following each subject is stated the number of hours per week of class exercise given to it; (a) and (b) signify first and second half-terms.

The modern foreign language chosen must be carried throughout the year, five hours each term.

The grade of the courses will depend on the amount and kind of language offered for entrance.

First Term:

Rhetoric 1, three hours, 8, 9, 10:15, 11:15, 3:30, or 4:30. Assistant Professors Raymond, Sisson and Gray, and instructors.

Elementary Mechanics, two hours, at 8, 9, 10:15, 11:15, 3:30, or 4:30. Assistant Professors Hood, Newton and Cochran.

French, German, or Spanish, five hours.

College Algebra (Mathematics 2), three hours, Monday, Wednesday, and Friday, at 8, 9, 10, 11:15, 2:30, or 3:30.

Plane Trigonometry (Mathematics 3) two hours, Tuesday and Thursday, at 8, 9, 10, 11:15, 2:30, or 3:30.

Free-hand Drawing (Mechanical Drawing 1), six hours for first six weeks of term—Monday, Wednesday, and Friday, from 8 to 10, from 10:15 to 11:15, from 1:30 to 3:30, from 3:30 to 5:30; Tuesday and Thursday, from 1:30 to 3:30, and Saturday, from 8 to 10; or Tuesday and Thursday, from 3:30 to 5:30, and Saturday, from 10 to 12. Assistant Professors Hood, Newton and Cochran.

Geometrical Drawing (Mechanical Drawing 2), six hours for last fourteen weeks of term. Same days and hours as for free-hand drawing. Assistant Professors Hood, Newton and Cochran.

Shop Work 1 or 2, five hours. Mr. Hanson and Mr. Jones.

Second Term:

French, German, or Spanish, five hours.

Analytical Geometry I (Mathematics 4), two hours, Tuesday and Thursday, at 8, 9, 10:15, 2:30, or 3:30.

Calculus I (Mathematics 5), three hours, Monday, Wednesday, and Friday, at 8, 9, 10:15, 2:30, or 3:30.

Descriptive Geometry (Mechanical Drawing 3), three hours, Monday, Wednesday, and Friday, at 8, 9, 10:15, 11:15, 3:30, or 4:30. Assistant Professors Hood, Newton and Cochran.

Rhetoric 2, two hours, at 8, 9, 10:15, 11:15, 3:30, or 4:30. Assistant Professors Raymond, Sisson and Gray, and assistants.

Machine Drawing (Mechanical Drawing 4), six hours, Monday, Wednesday, and Friday, from 8 to 10, from 10:15 to 12:15, from 1:30 to 3:30, from 3:30 to 5:30; Tuesday and Thursday, from 1:30 to 3:30, and Saturday, from 8 to 10; or Tuesday and Thursday, from 3:30 to 5:30, and Saturday, from 10 to 12. Assistant Professors Hood, Newton and Cochran.

Shop Work 1 or 2, five hours. Mr. Hanson and Mr. Jones.

For irregular students, classes in English, algebra and trigonometry, French 1 and German 1 and 3 are given in the second term, and classes in analytical and descriptive geometry, calculus, French 2 and German 2 are given in the first term.

CIVIL ENGINEERING.

First Term:

SOPHOMORE YEAR.

Physics 3, lectures four hours, at 10:15 or 11:15, and laboratory two hours. Associate Professor M. E. Rice and Assistant Professor Stimpson.

Chemistry 2, lectures three hours and laboratory four hours, 8 to 10. Associate Professor Cady and assistants.

Calculus II (Mathematics 7), three hours, Monday, Wednesday, and Friday, at 10:15 or 11:15.

Analytical Geometry II (Mathematics 6), two hours, Tuesday and Thursday, at 10:15 or 11:15.

Stereotomy (Civil Engineering 20), six hours, Monday and Wednesday, or Tuesday and Friday, 1:30 to 4:30. Assistant Professor Hubbard.

Shop Work 3, five hours, 1 to 6. Mr. Ward.

One technical report.

Second Term:

Physics 4, lectures four hours, at 11:15, and laboratory two hours. Associate Professor M. E. Rice and Assistant Professor Stimpson.

Surveying (Civil Engineering 5), five hours, at 9, 10:15 or 11:15, and field-work five hours. Associate Professor Dalton and Assistant Professor Hubbard.

Qualitative Analysis (Chemistry 3), lectures two hours and laboratory six hours, 8 to 10. Associate Professor Cady and assistants.

Topographical Drawing (Civil Engineering 1), six hours, Monday and Wednesday, or Thursday and Friday, 1:30 to 4:30. Assistant Professor Hubbard.

Shop Work 4, five hours, 1 to 6. Mr. Ward.

One technical report.

Summer Vacation:

Surveying (Civil Engineering 6). Associate Professor Dalton and assistants.

First Term:

JUNIOR YEAR.

Mechanics 1, five hours, at 8 or 9. Associate Professor H. A. Rice and Assistant Professor Hubbard.

Advanced English Composition (English Language 3), three hours, Monday, Wednesday, and Friday, at 8. Assistant Professor Raymond.

Geology 1, five hours, at 11:15. Professor Haworth.

Railway Surveying (Civil Engineering 11), five hours, at 11:15, and field-work five hours. Associate Professor Dalton.

Railway Drawing (Civil Engineering 2), six hours, Tuesday and Friday, 1:30 to 4:30. Associate Professor Dalton.

Second Term:

Strength of Materials (Mechanics 2), four hours, at 8 or 10:15. Associate Professor H. A. Rice.

Engines and Boilers (Mechanical Engineering 7), five hours, at 11:15. Assistant Professor Corp.

Location of Railways (Civil Engineering 10), three hours, Monday, Wednesday, and Friday, at 9. Associate Professor Dalton.

Roads and Pavements (Civil Engineering 9), two hours, Tuesday and Thursday, at 9. Associate Professor Dalton.

Graphical Statics (Civil Engineering 3), six hours, Tuesday and Friday, 1:30 to 4:30. Associate Professor Hoad.

Testing Laboratory (Mechanics 3), four hours, Monday, Tuesday, Thursday, or Friday, 1:30 to 5:30, or Saturday, 8 to 12. Assistant Professor Corp and assistants.

One technical report.

Summer Vacation:

Surveying (Civil Engineering 4). Associate Professor Dalton and assistants.

SENIOR YEAR.

First Term:

Hydraulics (Mechanics 4), (a), four hours, at 10:15. Assistant Professor Hubbard.

Hydraulic Machinery (Mechanical Engineering 10), (b), four hours, at 10:15. Professor Walker.

Hydraulic Laboratory (Mechanics 5), two hours, Monday, Wednesday, or Friday, 3:30 to 5:30. Assistant Professor Corp.

Roofs and Bridges (Civil Engineering 14), ten hours, 1:30 to 3:30. Associate Professor H. A. Rice.

Sewerage (Civil Engineering 12), (a), five hours, at 11:15. Associate Professor Hoad.

Water-supply (Civil Engineering 13), (b), five hours, at 11:15. Associate Professor Hoad.

Masonry (Civil Engineering 8), (b), five hours, at 8. Assistant Professor Hubbard.

One technical report.

Second Term:

Bridge Designing (Civil Engineering 15), ten hours, 1:30 to 3:30. Associate Professor H. A. Rice.

Specifications and Contracts (Civil Engineering 4), (b), five hours, at 11:15. Dean Marvin.

Cement Laboratory (Civil Engineering 7), four hours, Monday and Wednesday, 3:30 to 5:30. Associate Professor Hoad.

One full term's work chosen from engineering, mathematical or science subjects not required in course.

Thesis.

ELECTRICAL ENGINEERING.

SOPHOMORE YEAR.

First Term:

Physics 3, lectures and recitations four hours, Monday, Tuesday, Wednesday and Thursday, 10:15 or 11:15. One two-hour laboratory period per week. Associate Professor M. E. Rice, Assistant Professor Stimpson, and Mr. McCollum.

Calculus II (Mathematics 7), three hours, Monday, Wednesday, and Friday, at 10:15 or 11:15.

Analytic Geometry II (Mathematics 6), two hours, Tuesday and Thursday, at 10:15 or 11:15.

Chemistry 2, lectures three hours and laboratory four hours, 8 to 10. Associate Professor Cady and assistants.

Machine Drawing (Mechanical Engineering 1), six hours, Monday and Wednesday, 1:30 to 4:30, or Thursday, 1:30 to 4:30, and Saturday, 9 to 12. Assistant Professor ———.
Shop Work 3, five hours, 1 to 6. Mr. Ward.
One technical report.

Second Term:

Qualitative Analysis (Chemistry 3), lectures two hours and laboratory six hours, 8 to 10. Associate Professor Cady.
Physics 4, lectures and recitations four hours, Monday, Tuesday, Wednesday, and Thursday, at 10:15 or 11:15. One two-hour laboratory period per week. Associate Professor M. E. Rice and Assistant Professor Stimpson.
Kinematics (Mechanical Engineering 2), six hours, Monday and Wednesday, 1:30 to 4:30; or Tuesday and Thursday, 1:30 to 4:30. Assistant Professor Oshwald.
Steam Machinery (Mechanical Engineering 6), three hours, Monday, Wednesday, and Friday, at 10:15 or 11:15. Assistant Professor Oshwald.
Mathematics 8a, two hours, Tuesday and Thursday, at 10:15 or 11:15. Professor Newson.
Shop Work 4, five hours, 1 to 6. Mr. Ward.

JUNIOR YEAR.

First Term:

Analytic Mechanics (Mechanics 1), five hours, at 8. Associate Professor H. A. Rice.
Theory of Electricity and Magnetism (Physics 7), three hours, Monday, Wednesday, and Friday, at 9. Associate Professor M. E. Rice.
Thermodynamics (Mechanical Engineering 11), four hours, at 11:15. Professor Walker.
Dynamo Machinery (Electrical Engineering 1), three hours, Monday, Wednesday, and Thursday, at 10:15. Mr. McCollum.
Electrical Laboratory (Physics 8), eight hours, two days, 1:30 to 3:30. Mr. McCollum.
Shop Work 5, five hours, 1 to 6. Mr. Ward.
One technical report.

Second Term:

Mechanics of Machinery (Mechanical Engineering 16), three hours, Monday, Wednesday, and Friday, at 8. Professor Walker.
Theory of Alternating Currents (Electrical Engineering 2), five hours, at 11:15. Assistant Professor Freeman.

Electrical Laboratory (Electrical Engineering 5), eight hours, two days, from 1:30 to 5:30. Mr. McCollum.

Strength of Materials (Mechanics 2), four hours, at 10. Associate Professor H. A. Rice.

Advanced English Composition (English Language 3), three hours, Monday, Wednesday, and Friday, at 9. Assistant Professor Raymond.

Testing Laboratory (Mechanics 3), four hours, Monday, Tuesday, Thursday, Friday, 1:30 to 5:30, or Saturday, 8 to 12. Assistant Professor Corp.

SENIOR YEAR.

First Term:

Dynamo Machinery (Electrical Engineering 3), three hours, Monday, Wednesday, and Thursday, at 11:15. Assistant Professor Freeman.

Physical Chemistry (Chemistry 22), five hours, at 10:15. Associate Professor Cady.

Dynamo Design (Electrical Engineering 4), three hours, Monday, Wednesday, and Friday, 8 to 10. Assistant Professor Freeman.

Machine Design (Mechanical Engineering 4), six hours, Tuesday and Thursday, 8 to 10, and Friday, at 1:30. Professor Walker.

Electrical Laboratory (Electrical Engineering 6), six hours, two days, 2:30 to 5:30. Assistant Professor Freeman.

Engineering Laboratory (Mechanical Engineering 14), four hours, Tuesday or Thursday, 1:30 to 5:30. Assistant Professor Corp.

One technical report.

Second Term:

Specifications and Contracts (Civil Engineering 4), (b), five hours, 11:15. Dean Marvin.

Professional Thesis (Electrical Engineering 11), six hours, two days, 3:30 to 5:30. Assistant Professor Freeman.

Two and one-half terms' work to be chosen from any engineering or mathematical courses offered, subject to the approval of the department of electrical engineering. See especially courses 7, 8, 9 and 10 in electrical engineering, and courses 9 and 15 in physics.

MECHANICAL ENGINEERING.

SOPHOMORE YEAR.

First Term:

Physics 3, lectures four hours, at 10:15 or 11:15, and laboratory two hours. Associate Professor M. E. Rice and Assistant Professor Stimpson.

Calculus II (Mathematics 7), three hours, Monday, Wednesday, and Friday, at 10:15 or 11:15.

Analytical Geometry II (Mathematics 6), two hours, Tuesday and Thursday, at 10:15 or 11:15.

Chemistry 2, lectures three hours and laboratory four hours, 8 to 10. Associate Professor Cady and assistants.

Machine Drawing (Mechanical Engineering 1), six hours, Monday and Wednesday, 1:30 to 4:30, or Thursday, 1:30 to 4:30, and Saturday, 9 to 12. Assistant Professor ———.

Shop Work 3, five hours, 1 to 6. Mr. Ward.

One technical report.

Second Term:

Physics 4, lectures four hours, at 10:15 or 11:15, and laboratory two hours. Associate Professor M. E. Rice and Assistant Professor Stimpson.

Qualitative Analysis (Chemistry 3), lectures two hours and laboratory six hours, 8 to 10. Associate Professor Cady and assistants.

Steam Machinery (Mechanical Engineering 6), three hours, at 10:15 or 11:15. Assistant Professor ———.

Calculus III (Mathematics 8a), two hours, Tuesday and Thursday, at 10:15 or 11:15. Professor Newson.

Kinematics (Mechanical Engineering 2), six hours, Monday and Wednesday, or Tuesday and Thursday, 1:30 to 4:30. Assistant Professor ———.

Shop Work 4, five hours, 1 to 6. Mr. Ward.

One technical report.

JUNIOR YEAR.

First Term:

Analytical Mechanics (Mechanics 1), five hours, at 8 or 9. Associate Professor H. A. Rice.

Dynamo Machinery (Electrical Engineering 1), three hours, Monday, Wednesday, and Friday, at 10:15. Mr. McCollum.

Metallurgy 1 (Chemistry 19), five hours, at 11:15. Assistant Professor McFarland.

Electrical Laboratory (Physics 8), four hours, 1:30 to 5:30.
Associate Professor M. E. Rice.

Engineering Laboratory (Mechanical Engineering 14), four hours, Tuesday or Thursday, 1:30 to 5:30. Assistant Professor Corp.

Shop Work 5, five hours, 1 to 6. Mr. Ward.

Mechanical Engineering Society, once a week.

Second Term:

Strength of Materials (Mechanics 2), four hours, at 8 or 10:15. Associate Professor H. A. Rice.

Mechanics of the Steam-engine (Mechanical Engineering 3), three hours, Monday and Wednesday, at 9, and Monday, 1:30 to 3:30. Professor Walker.

Theory of Alternating Currents (Electrical Engineering 2), five hours, at 11:15. Assistant Professor Freeman.

Electrical Laboratory (Electrical Engineering 5), four hours, 1:30 to 5:30. Mr. McCollum.

Testing Laboratory (Mechanics 3), four hours, Monday, Tuesday, Thursday, or Friday, 1:30 to 5:30, or Saturday, 8 to 12. Assistant Professor Corp.

Shop Work 6, five hours, 1 to 6. Mr. Ward.

Mechanical Engineering Society, once a week.

One technical report.

Summer Vacation Work (Mechanical Engineering 17). This course to be done before graduation.

First Term:

SENIOR YEAR.

Advanced English Composition (English Language 3), three hours, Monday, Wednesday, and Friday, at 8. Assistant Professor Raymond.

Hydraulics (Mechanics 4), (a), four hours, at 10:15. Assistant Professor Hubbard.

Hydraulic Machinery (Mechanical Engineering 10), (b), four hours, at 10:15. Professor Walker.

Hydraulic Laboratory (Mechanics 5), Monday, Wednesday, or Friday, 3:30 to 5:30. Assistant Professor Corp.

Thermodynamics (Mechanical Engineering 11), four hours, at 11:15. Professor Walker.

The Gas-engine (Mechanical Engineering 9), two hours, Tuesday and Thursday, at 9. Associate Professor Walker.

Machine Design (Mechanical Engineering 4), six hours, Monday and Wednesday, 2:30 to 5:30. Professor Walker.

General Machine Design (Mechanical Engineering 8), three hours, Monday, Wednesday, and Friday, at 9. Assistant Professor Corp.

Thesis Work (Mechanical Engineering 17), two hours, Friday, 1:30 to 3:30.

Mechanical Engineering Society, once a week.

One technical report.

Second Term:

Specifications and Contracts (Civil Engineering 4), (b), five hours, at 11:15. Dean Marvin.

Advanced Steam Engineering (Mechanical Engineering 12), three hours, Tuesday and Thursday, at 8 to 10. Professor Walker.

Engineering Practice (Mechanical Engineering 13), four hours, (a), at 11:15. Professor Walker.

Machine Design (Mechanical Engineering 5), eight hours, Monday and Thursday, 1:30 to 5:30. Professor Walker.

Engineering Laboratory (Mechanical Engineering 14), four hours, Wednesday, 1:30 to 5:30. Professor Walker.

Thesis Work (Mechanical Engineering 13), Friday, 1:30 to 5:30. Professor Walker.

Mechanical Engineering Society, once a week.

MINING ENGINEERING.

SOPHOMORE YEAR.

First Term:

Chemistry 2, lectures three hours and laboratory four hours, 8 to 10. Associate Professor Cady and assistants.

Calculus II (Mathematics 7), three hours, Monday, Wednesday, and Friday, at 10:15 or 11:15.

Analytical Geometry II (Mathematics 6), two hours, Tuesday and Thursday, at 10:15 or 11:15.

Elementary Geology (Geology 1), lectures five hours, at 11:15. Professor Haworth.

Machine Drawing (Mechanical Engineering 1), six hours, Monday and Wednesday, 1:30 to 4:30, or Thursday, 1:30 to 4:30, and Saturday, 9 to 12. Assistant Professor ———.

Shop Work 3, five hours, 1 to 6. Mr. Ward.

Mining Journal Meeting, one hour.

One technical report.

Second Term:

Qualitative Analysis (Chemistry 3), lectures two hours and

laboratory six hours, 8 to 10. Associate Professor Cady and assistants.

Surveying (Civil Engineering 5), five hours, at 9, 10:15 or 11:15, and field-work five hours. Associate Professor Dalton and Assistant Professor Hubbard.

Mineralogy (Mineralogy 1), lectures and laboratory work, ten hours, from 3:30 to 5:30. Assistant Professor Todd.

Topographical Drawing (Civil Engineering 1), four hours, Thursday and Friday, 1:30 to 3:30. Assistant Professor Hubbard.

Mining Journal Meeting, one hour.

One technical report.

Summer Vacation:

Surveying (Civil Engineering 6), four weeks. Associate Professor Dalton and assistants.

JUNIOR YEAR.

First Term:

Physics 3, lectures four hours, at 10:15 or 11:15, and laboratory two hours. Associate Professor M. E. Rice and Assistant Professor Stimpson.

Economic Geology (Geology 4), three hours, Monday, Wednesday, and Friday, at 9. Professor Haworth.

Mining 2, two hours, Tuesday and Thursday, at 9. Associate Professor Young.

Mining 1, five hours, at 8. Associate Professor Young.

Quantitative Analysis (Chemistry 7), lectures and laboratory work, ten hours, 3:30 to 5:30. Professor Bailey and Assistant Professor Landrum.

Shop Work 4, five hours, Saturday, 8 to 1. Mr. Ward.

Mining Journal Meeting, one hour.

One technical report.

Second Term:

Physics 4, lectures four hours, at 10:15 or 11:15, and laboratory two hours. Associate Professor M. E. Rice and Assistant Professor Stimpson.

Assaying and Metallurgical Analysis (Chemistry 14), ten hours, 3:30 to 5:30. Assistant Professor McFarland.

Mining 2, three hours, Monday, Wednesday, and Friday, at 10:15. Associate Professor Young.

Economic Geology (Geology 4), two hours, Tuesday and Thursday, at 10:15. Professor Haworth.

Advanced English Composition (English Language 3), three

hours, Monday, Wednesday, and Friday, at 9. Assistant Professor Raymond.

Mining Laws (Mining 10), lectures, one hour. Professor Moore. (May be taken in Senior year.)

Mining Journal Meeting, one hour.

One technical report.

Summer Vacation:

Summer Excursion Work (Mining 8), four weeks. Professor Haworth and Associate Professor Young.

SENIOR YEAR.

First Term:

Mining 3,* five hours at 10:15. Associate Professor Young.
Mechanics 1, five hours at 8 or 9. Associate Professor H. A. Rice and Assistant Professor Hubbard.

Optional: Five hours from any geological, mathematical or engineering subjects not taken in the mining course.

Mining Journal Meeting, one hour.

Second Term:

Strength of Materials (Mechanics 2), four hours, at 8. Associate Professor H. A. Rice.

Testing Laboratory (Mechanics 3), Monday, Tuesday, Thursday, or Friday, 1:30 to 5:30, or Saturday, 8 to 12. Assistant Professor Corp.

Metallurgy II (Chemistry 20), five hours, at 10:15. Assistant Professor McFarland.

Mining 4, (a), five hours, at 11:15. Associate Professor Young.

Specifications and Contracts (Civil Engineering 4), (b), five hours, at 11:15. Dean Marvin.

Professional Thesis. Professor Haworth and Associate Professor Young.

Mining Law. (See Junior year.)

Mining Journal Meeting.

CHEMICAL ENGINEERING.

SOPHOMORE YEAR.

First Term:

Physics 3, lectures four hours, at 10:15 or 11:15, and laboratory two hours. Professor Hill and Assistant Professor Stimpson.

* Mining 7 may be taken in place of Mining 3.

Chemistry 2, lectures three hours and laboratory four hours, 8 to 10. Associate Professor Cady and assistants.

Calculus II (Mathematics 7), three hours, Monday, Wednesday, and Friday, at 10:15 or 11:15.

Analytical Geometry II (Mathematics 6), two hours, Tuesday and Thursday, at 10:15 or 11:15.

Machine Drawing (Mechanical Engineering 1), six hours, Monday and Wednesday, 1:30 to 4:30, or Thursday, 1:30 to 4:30, and Saturday, 9 to 12. Assistant Professor ———.

Shop Work 3, five hours, 1 to 6. Mr. Ward.

Chemical Club Meeting, Thursday, at 5.

One technical report.

Second Term:

Physics 4, lectures four hours, at 10:15 or 11:15, and laboratory two hours. Associate Prof. M. E. Rice and Assistant Professor Stimpson.

Qualitative Analysis (Chemistry 3), lectures two hours and laboratory six hours, 8 to 10. Associate Professor Cady and assistants.

Mineralogy (Mineralogy 1), ten hours, 3:30 to 5:30. Assistant Professor Todd.

Shop Work 4, five hours, 1 to 6. Mr. Ward.

Chemical Club Meeting, Thursday, at 5.

One technical report.

JUNIOR YEAR.

First Term:

Mechanics 1, five hours, at 8 or 9. Associate Professor H. A. Rice, and Assistant Professor Hubbard.

Advanced English Composition (English Language 3), three hours, Monday, Wednesday, and Friday, at 8. Assistant Professor Raymond.

Quantitative Analysis (Chemistry 7), twenty hours, 1:30 to 5:30. Professor Bailey and Assistant Professor Landrum.

Chemical Club Meeting, Thursday, at 5.

Second Term:

Strength of Materials (Mechanics 2), four hours, at 8 or 10:15. Associate Professor H. A. Rice and Assistant Professor Hubbard.

Testing Laboratory (Mechanics 3), four hours, Monday, Tuesday, Thursday, or Friday, 1:30 to 5:30, or Saturday, 8 to 12. Assistant Professor Corp.

Organic Chemistry (Chemistry 17), ten hours, 3:30 to 5:30.

Professor Duncan.

Metallurgy II, five hours, at 10:15. Assistant Professor McFarland.

Chemical Club Meeting, Thursday, at 5.

One technical report.

SENIOR YEAR.

First Term:

Three optionals: Fifteen credit hours to be chosen from engineering, mathematical or science subjects not included in course, for which the student may have the requisite preparation.

Chemical Club Meeting, Thursday, at 5.

One technical report.

Second Term:

Specifications and Contracts (Civil Engineering 4), (b), five hours, at 11:15. Professor Marvin.

Chemical Club Meeting, Thursday, at 5.

Assaying and Metallurgical Analysis (Chemistry 14), ten hours, 3:30 to 5:30. Assistant Professor McFarland.

Thesis.

Physical Chemistry (Chemistry 23), five hours, at 10:15.

Associate Professor Cady.

EQUIPMENT.

THE LIBRARY.

The scientific portion of the University library directly related to engineering contains about 13,000 volumes, while in the reading-room are found 285 American and foreign engineering and scientific journals.

ENGINEER'S INSTRUMENTS.

These comprise transits, levels, compasses, solar attachments, rods, chains, tapes, plane tables, heliotropes, current meter, aneroids, and other minor instruments. Among the above are a precise level for very accurate leveling, a secondary triangulation transit for topographical work, and an altazimuth instrument for use on primary triangulations, which has a ten-inch circle, read to single seconds of arc.

For the summer work in surveying a complete camping outfit is provided. Planimeters, Thatcher and Manheim slide rules and

Colby's stadia slide rules are used for rapid calculation and estimation of quantities.

DRAWING-ROOMS.

These are well lighted and provided with tables. They are furnished with many photographs of actual constructions, and the cases contain large numbers of blue-prints of working-drawings for bridges, railways, sewers, machinery, etc.

LABORATORIES.

The School of Engineering is well equipped with apparatus of modern pattern from the best makers.

PHYSICAL GEOLOGY AND MINING.

The department of physical geology and mining possesses a large collection of minerals and samples of rocks which are of economic value, and the necessary apparatus for their examination and identification.

The ore-dressing laboratory, located in the west basement of the Chemistry Building, contains stamps, jigs, crushers, screens (power and hand), hydraulic classifiers, spitz kasten and spitz lutte, an automatic ore-feeder, a slime table, a pulverizer, besides facilities for panning, vanning and sampling ores. It affords opportunities for practical training in making laboratory and field tests on ores. This work is supplemented by the mining museum, which contains a collection of implements and apparatus used in mining and milling operations, as well as models illustrating methods and processes.

The state legislature in 1907 made a special appropriation of \$50,000 for erecting and equipping a building for geology and mining. Upon the completion of this building, the department of mining will have superior equipment of all kinds.

THE NEW ENGINEERING BUILDINGS.

The new Engineering Building for the civil and mechanical departments is now under construction. It occupies a ground space of about 190 x 65 feet and will be of four stories. It contains classrooms, offices, drawing-rooms, blue-print rooms, and several laboratories. An annex to this building, 50 x 100 feet, also to be built this year, is to be equipped for the mechanical engineering laboratory, which, together with the new additions to the power plant, will add largely to the facilities for doing

high-grade work. The present equipment is described in the following paragraphs.

CIVIL AND MUNICIPAL ENGINEERING.

In the testing laboratories are found an Olsen universal machine of 100,000 pounds capacity, a 50,000-pound torsion machine of the same make, a 50,000-pound transverse machine (which has been built in the Fowler Shops), a Riehle machine of 40,000 pounds capacity, a standard rattler for the testing of paving brick, together with scales, tools and appliances for making accurate tests of all kinds of materials. One room is devoted to the testing of hydraulic cements, and is equipped with an Olsen machine of 2000 pounds capacity, and an automatic shot machine of 1000 pounds capacity, convenient tables and racks, and a fair amount of accessory apparatus. Some machinery has been installed recently for testing the value of various stone for making macadam roads.

The hydraulic laboratory contains a measuring pit, a large steel orifice tank for experimentation with jets, a triplex power pump, a centrifugal pump, pipe-lines, weir-boxes, gages, a Venturi meter with manometer, a Pelton water motor, etc., arranged to illustrate the laws of fluid motion, and affording some opportunity for testing hydraulic machinery.

MECHANICAL ENGINEERING.

In the Fowler Shops there are three small rooms fitted up with apparatus for experimental work. In one of these, located on the ground floor, is a small boiler and a 10-horse-power Atlas slide-valve engine direct connected to an Alden absorption dynamometer; a small direct-acting steam-pump; two steam injectors, set for testing; and an outfit for calibrating steam-engine indicator springs. The engine serves for practice in valve setting, and, in company with the boiler, for elementary efficiency tests. The engines and boilers in the power plant adjoining are available for commercial testing, and a 75-horse-power Ball engine in this equipment is cut out once each year for an efficiency test, to give opportunity for a complete thermal analysis by Hirn's method. A 9-inch Westinghouse air-brake pump is equipped with condenser and air-meter for efficiency tests.

In another room, in the basement, are located two 8-horse-power gas- or gasoline-engines, fully equipped with large measuring tanks for air and gas, pressure regulators, temperature-recording outfit, and brakes for complete testing; two oil fric-

tion-testing machines; and two steam separators for testing.

In the third room, in the tower of the building, is the apparatus for coal, oil and gas testing, as follows: One Carpenter's oil viscosimeter, one open-cup flash-test apparatus, one chill-test apparatus for oil, one Parr's standard calorimeter, apparatus for determination of sulfur in coal, apparatus for proximate analysis of coal, and Orsat's apparatus for flue-gas analysis.

Other equipment includes a working set of New York and Westinghouse air-brakes, four steam-engine and two gas-engine indicators, two throttling and two separating steam calorimeters, one Barrus superheating calorimeter, two standard gauge-testing outfits, a good assortment of planimeters, standard gauges, a Fuller calculating instrument, models of valve gears, and several specimens of boiler-tube cleaners.

ELECTRICAL ENGINEERING.

The dynamo-laboratory equipment consists of two D. C., Crocker Wheeler 3-horse-power motors, provided with separate shunt and series field spools, two General Electric double-current generators, $7\frac{1}{2}$ K. W., tapped on the alternating-current end for two-phase, three-phase or single-phase current at sixty cycles, two General Electric special laboratory machines, rated $7\frac{1}{2}$ K. W., consisting of a stationary armature, wound six-phase, and provided with a revolving field and three different types of induction motor rotors. There are also a Westinghouse 2-horse-power, three-phase motor, a Fort Wayne self-starting synchronous motor, and a number of small D. C. motors.

The machinery of the laboratory is run from a line shaft by a 15-horse-power Siemens and Halske motor. The laboratory is provided with a good assortment of Weston, Whitney and Thompson volt, ampere and watt meters, and auxiliary apparatus, such as resistances, reactances, transformers, etc.

The department has an excellent assortment of modern telephone apparatus. This includes complete sets for illustrating installations, of both local battery and central types. The best selective systems are represented, as well as a good working exhibit of automatic telephones.

CHEMICAL ENGINEERING.

The chemical laboratory contains separate rooms for general chemistry, qualitative analysis, quantitative analysis, physical chemistry, and assaying. There are abundant specimens and samples of chemical products to use for illustration. For

physical chemistry, especially, the instruments for electrical measurements are of the newest designs and greatest accuracy. The department also has a liquid-air machine, so that experiments can be carried on at low temperatures. The assay-room is provided with the usual furnaces, muffles, etc., for the complete assay of metallurgical products.

THE FOWLER SHOPS.

This building contains in the boiler-room two Erie City return-flue, 16'x66" high-pressure boilers; also the present equipment of the experimental steam-engineering laboratory described above. Adjoining is the engine-room, in which is a Russell four-valve, medium-speed engine of 150 horse-power, and also a 75-horse-power Ball high-speed, self-oiling engine. Both these engines are fitted with indicator connections and reducing gears. These two couple conjointly or independently on a short main-line shaft, from which are run the various power and lighting generators. These at present consist of one 1000-volt, 60 K. W., General Electric alternator; one 65 K. W., Siemens and Halske, D. C., 125 volts; one 17½ K. W., General Electric, D. C., 125 volts; one Bullock, 115 K. W., 1000-volt, three-phase, revolving-field light generator, and one T. A. regulator. Some sixteen independent circuits run from a central switchboard to various buildings and laboratories of the University, so that varieties of currents are always available. In the engine-room is also a Cookson feed-water heater and Cochran separators for each engine. Here, also, are installed a duplex 18"x12"x10" steam fire-pump, and a 7½"x5"x8" steam service pump for the water-supply of the University, and an exhaust-steam-heating equipment for heating the building. The forge-room, 50'x40', contains sixteen Sturtevant down-draft forges, with anvils and all usual smithing tools; there are also provided one large forge and a Little Giant power trip-hammer for heavier work.

The metal-working room, which is 80'x50', has 160 feet of benches, with twenty vises and usual bench tools. There are, at present, fourteen 14"x6' Standard engine-lathes; one 18"x12' Challenge engine-lathe, with all attachments; one crank shaper; one 25" Challenge drill-press, with back gear and self-feed; one universal cutter and reamer grinder; one 20" drill-press, with hand feed; one 1½" bolt-cutter; one universal milling-machine,

with spiral gear-cutter, and vertical and all other attachments—all the above made by the American Tool Works Company, Cincinnati, Ohio. Also, one 26"x26"x7' Gray planer; one 18"x8' boring lathe; two 20" drill-presses, with power feed, and one 2"x24" Jones and Lawson turret-lathe with chucking attachments. There are also power hack-saws, dry and wet grinders, grindstones, etc., usually found in well-equipped shops. The line shafting is divided independently into three sections by friction-clutch couplings, and is run by a Westinghouse 4-pole, 15-horse-power motor. The tool-room, under care of an attendant, is well furnished with small tools and supplies, which are delivered to students on the check system, and after use they are returned to their places. (See p. 221, Purchase of Materials.) This room also contains a 14"x5' Challenge enigne-lathe with draw-bar chucks, and a power drill, both made by the American Tool Works Company, a Yankee drill-grinder, all run by an electric motor. Six 14"x6' engine-lathes, American Tool Works Company design, are now being constructed by students as regular course work, and as additions to equipment. An electric freight elevator connects with the wood-working room above. This latter room, 80'x50', contains one 12"x6' speed lathe; one 18"x12' pattern-maker's lathe, with iron shears and traveling slide-rest and cross-feed; also floor stand and rear face plate; one scroll-saw; one combination cross-cut and rip-saw—with jointer head and boring attachment; one miter saw and universal trimmer; one Oliver band-saw; nine double benches with tail vises and stops, and full sets of pattern-making tools for each; twelve Richardson iron-body, 11"x28" speed lathes, with full set of tools. A seven-foot face-plate lathe, a disk sandpapering machine and a boring-machine have been built by the students and added to the equipment. The shafting is run by electric motor. Opening from this is a wash-room, 40'x20', with stone floor, and 470 lockers. In the various benches are also 328 drawers, reserved, with the lockers, for the students' use. On this floor is also the dynamo laboratory, 40'x50'. In this, at present, is a central line shaft, operated at constant speed by a Siemens and Halske 15-horse-power motor. Split wood pulleys of assorted diameters allow a great range of speed for motors and generators used for experimental study. Two standard Crocker Wheeler, 2½ K. W., D. C. machines, with removal coils for shunt, series and com-

pound winding, serve for D. C. experiments. There are also a $2\frac{1}{2}$ K. W., single-phase, rotary transformer; one $3\frac{1}{2}$ K. W., two-phase generator; and one $4\frac{1}{2}$ K. W., 125 V., compound multipolar, D. C. generator; one 2 K. W., three-phase Westinghouse induction motor; one $7\frac{1}{2}$ K. W., one-, two- and three-phase G. E. rotary converter; several 1000-volt transformers of various types.

DETAILED COURSES OF STUDY.

All courses that are given in the first half of any term are indicated by (a); those occurring in the second half of any term by (b). The statement of hours refers to the number of hours per week.

CHEMISTRY.

Professor BAILEY.
Professor DUNCAN.
Associate Professor CADY.
Assistant Professor MCFARLAND.
Assistant Professor BUSHONG.
Assistant Professor JACKSON.
Assistant Professor LANDRUM.
Mr. RUPERT.

2.—ADVANCED INORGANIC CHEMISTRY. Lectures, recitations, and laboratory work. Required in Engineering School, Sophomore. 1st term, lectures three hours and laboratory four hours, 8 to 10. Associate Professor Cady and assistants.

3.—QUALITATIVE ANALYSIS. Lectures and laboratory work. Bailey and Cady's Guide to the Study of Qualitative Analysis. Must be preceded by course 2. Required in the Engineering School, Sophomore. 2d term, lectures two hours and laboratory six hours, 8 to 10. Associate Professor Cady and assistants.

7.—QUANTITATIVE ANALYSIS. Lectures and laboratory work. Must be preceded by course 3. Required of mining engineers. 1st term, ten hours, 3:30 to 5:30; required of chemical engineers, twenty hours, 1:30 to 5:30; Professor Bailey and Assistant Professor Landrum. Or 2d term, ten hours, 8 to 10. Assistant Professor Landrum.

9.—GAS ANALYSIS. A laboratory course in the quantitative determination of the common gases, analysis of gaseous mixtures, flue gases, natural gas, etc. Both exact methods and technical methods will be employed. Gill's Gas Analysis and Hempel's Gas Analysis. Must be preceded by course 8. 1st term, two hours, Tuesday and Thursday, by appointment. Assistant Professor McFarland.

10.—OIL ANALYSIS. A laboratory course in the analysis of animal, vegetable or mineral oils. Determination of the specific gravity, viscosity, and other constants. Distillation as applied

to mineral oils. Must be preceded by course 8. 2d term, three hours, Monday, Wednesday, and Friday, by appointment. Assistant Professor Bushong.

11.—ELECTROLYTIC ESTIMATION OF METALS. A laboratory course in the practical work of analysis by electrolysis, including the use of the rotating cathode. Must be preceded by course 8. 2d term, two hours, by appointment. Associate Professor Cady.

13.—ANALYSIS OF BOILER FEED-WATERS. Optional for engineers. Must be preceded by course 8. 1st term, two hours. Professor Bailey.

14.—ASSAYING AND METALLURGICAL ANALYSIS. This is a course in the volumetric analysis of the ores of copper, lead, iron, zinc, manganese, etc., followed by the analysis of bullion. During the first half of the term the time will be occupied with the fire assay of the ores of gold, silver, and lead. Lectures and laboratory work. Furman's Manual of Practical Assaying. Must be preceded by course 8 and mineralogy 1. Required of chemical and mining engineers, Junior. 2d term, ten hours, 3:30 to 5:30, and by appointment. Assistant Professor McFarland.

17.—ORGANIC CHEMISTRY. A study of the hydrocarbons and their derivatives. Lectures, recitations, and laboratory work. Must be preceded by courses 1 and 2. Required of chemical engineers, Junior. 2d term, ten hours, 3:30 to 5:20. Professor Duncan.

22.—PHYSICAL CHEMISTRY. A course paying special attention to electrochemistry. Lectures and laboratory work. Must be preceded by chemistry 8, or by chemistry 3 and physics 7 and 8 and mathematics 7. Required of electrical engineers; optional for mining engineers. 1st term, five hours, at 10:15. Associate Professor Cady.

23.—PHYSICAL CHEMISTRY. A general course in theoretical and physical chemistry. Lectures and laboratory work. Required of chemical engineers. 2d term, five hours, at 10:15. Associate Professor Cady.

Other courses in chemistry (the College) are open as optionals to chemical engineers.

CIVIL ENGINEERING.

Dean MARVIN.

Associate Professor HOAD.

Associate Professor H. A. RICE.

Associate Professor DALTON.

Assistant Professor HUBBARD.

Assistant Professor NEWTON.

1.—TOPOGRAPHICAL DRAWING. A study of and practice in the conventional methods of representing topography, coupled with the platting of the results of field-practice in connection with surveying. Required of Sophomore civil and mining engineering students. 2d term, six hours, Monday and Wednesday, or Thursday and Friday, 1:30 to 4:30. Assistant Professor Hubbard.

2.—RAILWAY DRAWING. Railway plats, profiles and plans for track and small structures. Lectures and drawing-room practice in tracing and blue-printing and in platting the results of field-work. Required of civil engineering students. Junior, first term, six hours, Tuesday and Friday, 1:30 to 4:30. Associate Professor Dalton.

3.—GRAPHICAL STATICS. The properties of equilibrium polygons and other methods of representing the actions of forces, with application to the determination of stresses in beams, roof trusses, and stone arches. Lectures and drawing. Required of civil engineering students. Junior, 2d term, six hours, Tuesday and Friday, 1:30 to 4:30. Associate Professor Hoad.

4.—CONTRACTS AND SPECIFICATIONS. An elementary course on the law of contracts, with special reference to engineering practice. The technical features of specifications. Methods of procedure in letting and conducting contract work, and the engineer's relation thereto. Required of all engineering students. Senior, 2d term, (b), five hours, at 11:15. Dean Marvin.

5.—SURVEYING. Engineer's instruments, their construction and adjustment. Methods of making and platting land, topographic, mining and hydrographic surveys. Sources of error and the means of controlling the precision of field-work. Leveling and earthwork. Required of civil and mining engineering students. Sophomore, 2d term, five hours, at 9, 10:15, or 11:15, with one half-day per week in field-practice. Associate Professor Dalton and Assistant Professors Hubbard and Newton.

6.—SUMMER FIELD-WORK. Courses in practical surveying. The character of the work done will vary somewhat from year to year, depending upon the make-up of the body of students that go into camp. Small parties of three or four each are

formed, and some of these are engaged in making topographical surveys of tracts of about one square mile each, laying out triangles and reading angles, leveling between stations, running stadia traverses, platting results, and drawing a contour map. Other parties may be engaged in laying out a short line of railway, in running precise levels, making a hydrographic survey, or gaging the flow of the Kansas river. All parties camp together. Required of Sophomore civil and mining engineering students and Junior civil engineering students. Ten hours per day for one month, at the close of the college year, in June. Associate Professor Dalton and assistants.

7.—HYDRAULIC CEMENT. A laboratory course in testing hydraulic cements and making comparison of their qualities. Reading, experimental work, and reports of tests made. Required of civil engineering students. Senior, 2d term, four hours, Monday and Wednesday, 3:30 to 5:30. Associate Professor Hoad.

8.—MASONRY. Character of materials composing masonry. Methods of cutting and dressing stone. Foundations: Cribwork, coffer-dams, caissons, piles and pile-driving, concrete, pneumatic processes, etc. Masonry structures: Culverts, arches, piers, abutments, bridges, etc.; their form, construction, strength, and cost. Compound arches of concrete and metal. Recitations and lectures. Required of civil engineering students. Senior, 1st term, (b), five hours, at 8. Assistant Professor Hubbard.

9.—ROADS AND PAVEMENTS. A study of the materials for and methods used in the construction and improvement of country roads and city pavements. Earthwork, drainage, the road foundation, the wearing surface, etc. Principles governing the location of roads. The economic importance of the "good-roads movement." Required of civil engineering students. Junior, 2d term, two hours, Tuesday and Thursday, at 9. Associate Professor Dalton.

10.—RAILWAY LOCATION. The principles involved in an economic location and construction of railways. Analysis of traffic and operating expenses. The influence of proposed changes in location upon the amount of total revenue from traffic, the bonded debt and the corresponding fixed charges for interest, the operating expense, and the dividend-paying capacity of the road. Methods of conducting field-work for preliminary and location surveys. Required of civil engineering students. Junior, 2d term, three hours, Monday, Wednesday, and Friday, at 9. Associate Professor Dalton.

11.—RAILWAY SURVEYING. A study of the methods of laying out and constructing railways. The setting out of simple and compound curves and calculation of excavation and embankment. Yards, turnouts, and switches. Easement curves of various types. Calculation of waterways, and methods of staking out foundations for culverts and bridges. This course must be preceded by a general course in surveying. Required of civil engineering students. Junior, 1st term, five hours, at 10:15, with field-practice one-half day per week. Associate Professor Dalton.

12.—SANITARY ENGINEERING. The collection, removal and disposal of sewage by various methods. Water-carriage and pneumatic systems. Separate and combined systems. The construction of sewers, outfalls, manholes, and flushing appliances. Ventilation of sewers. Treatment of sewage. The collection and disposal of garbage and other refuse. Garbage destruction and utilization. Street cleaning. Required of civil engineering students. Senior, 1st term, (a), five hours, at 11:15. Associate Professor Hoad.

13.—SANITARY ENGINEERING. Water-supply. The requisites of a supply as to quality and quantity. The value of chemical and biological analyses and the interpretation of results. Relation of water-supply to the public health. Rainfall and the gathering and storage of surface-water. The collection of ground-water. The use of rivers and lakes as sources of supply. Distributing systems; conduits and pipe-lines, pumping machinery, the flow of water in open channels and closed conduits. The construction of dams and reservoirs. The purification of water. Methods of maintaining the efficiency of existing plants. Required of civil engineering students. Senior, 1st term, (b), five hours, at 11:15. Associate Professor Hoad.

14.—ROOFS AND BRIDGES. Analytical and graphical calculation of stresses in framed structures under various forms of loading. This course must be preceded by course 2 in mechanics. Required of civil engineering students. Senior, 1st term, ten hours, 1:30 to 3:30. Associate Professor H. A. Rice.

15.—BRIDGE DESIGNING. A study in bridge details and the dimensions of parts. Students work out designs for a plate girder and a simple truss. Must be preceded by course 14. Required of civil engineering students. Senior, 2d term, ten hours, 1:30 to 3:30. Associate Professor H. A. Rice.

19.—SANITARY ENGINEERING. A course designed to follow 12

and 13. Lectures, recitations, and reading. Optional for seniors. 2d term, five hours, at 10:15. Associate Professor Hoad.

20.—STEREOTOMY. Required of civil engineering students. Sophomore, 1st term, six hours, Monday and Wednesday, or Thursday and Friday, 1:30 to 4:30. Assistant Professor Hubbard.

21.—REINFORCED CONCRETE. Optional for seniors. 2d term, five hours, at 9. Associate Professor H. A. Rice.

22.—MAINTENANCE OF WAY. An advanced course in railway engineering. Optional for Seniors. 2d term, five hours, at 8. Associate Professor Dalton.

ELECTRICAL ENGINEERING.

Professor ———.

Associate Professor M. E. RICE.

Assistant Professor FREEMAN.

Assistant Professor STIMPSON.

Instructor MCCOLLUM.

Courses 1 to 6, inclusive, and course 11 are required of all electrical engineering students. Courses 1, 2 and 5 are required of mechanical engineering students. Courses 7 to 10, inclusive, are optional for electrical engineering students.

1.—DYNAMO MACHINERY. Theory of direct-current generators and motors. Prerequisites, physics 3 and 4. Junior, 1st term, three hours, Monday, Wednesday, and Thursday, at 10:15. Mr. McCollum.

2.—THEORY OF ALTERNATING CURRENTS. A mathematical treatment of alternating-current phenomena and the theory of alternating-current machinery. Fundamental types. Prerequisite, course 1. Junior, 2d term, five hours, at 11:15. Assistant Professor Freeman.

3.—DYNAMO MACHINERY. Advanced theory of alternating-current machinery. Senior, 1st term, three hours, Monday, Wednesday, and Thursday, at 11:15. Assistant Professor Freeman.

4.—DYNAMO DESIGN. Practical calculations and details of construction, together with working-drawings for selected types of generators and motors. In addition to general class-room work each student will prepare one or more special designs which may afterward be constructed in the shops. Senior, 1st term, six hours, Monday, Wednesday, and Friday, 8 to 10. Assistant Professor Freeman.

5.—ELECTRICAL LABORATORY. A continuation of physics 8 and coördinate with course 2 above. Prerequisite, course 1 above. This course consists of experiments illustrating the principles of alternating currents and the methods of measurement used in testing alternating-current machinery. Junior, 2d term, eight hours, two days, 1:30 to 5:30. Mr. McCollum.

6.—ELECTRICAL LABORATORY. Advanced experiments with electrical machinery and the testing of machines, chiefly of alternating current types. Senior, 1st term, six hours, 2:30 to 5:30. Assistant Professor Freeman.

7.—ELECTRIC LIGHTING. Senior, 2d term, (a), five hours, at 11:15. Assistant Professor Freeman.

8.—ELECTRIC POWER TRANSMISSION. Senior, 2d term, (b), five hours, at 9. Assistant Professor Freeman.

9.—ELEMENTARY TELEPHONY. Lectures, recitations and laboratory work. This course develops the principles that underlie all telephone apparatus and gives practical experiments with the fundamental telephone transmitters, receivers and central-station arrangements. Senior optional, 2d term, five hours, by appointment. Assistant Professor Stimpson.

10.—ELECTRIC RAILWAYS. Senior optional, 2d term, (a), five hours, at 8. Assistant Professor Freeman.

11.—PROFESSIONAL THESIS. Senior, 2d term, six hours, by appointment. Professor ——— or other instructor, according to the line of work chosen.

ENGLISH LANGUAGE AND RHETORIC.

Assistant Professor RAYMOND.

Assistant Professor SISSON.

Assistant Professor GRAY.

Assistant Professor GARDNER.

Assistant Professor THOMAS.

Mr. MOORE.

Miss HAYWARD.

1.—RHETORIC AND ENGLISH COMPOSITION. Outlines of rhetoric, with exercises and themes. Required of all Freshmen. 1st term, three hours, at 8, 9, 10:15, 11:15, 3:30, or 4:30. Assistant Professors Raymond, Sisson, and Gray, and assistants.

2.—RHETORIC AND COMPOSITION. Two hours, Tuesday and Thursday, at 8, 9, 10:15, 11:15, 3:30, or 4:30. Assistant Professors Raymond, Sisson, and Gray, and assistants.

3.—ADVANCED ENGLISH COMPOSITION. Study of the principles of discourse, with special reference to the forms used in engineering work, with exercises. Required of Juniors and Seniors in the School of Engineering. 1st term, three hours, Monday, Wednesday, and Friday, at 8; or 2d term, three hours, Monday, Wednesday, and Friday, at 9. Assistant Professor Raymond.

GEOLOGY.

Professor HAWORTH.

1.—ELEMENTS OF PHYSICAL GEOLOGY. A study of the elementary principles of general geology, including physical conditions throughout geologic time and the formation of continents; nature and origin of the different kinds of rocks and the rock-forming materials; the destructive process of erosion or denudation, and the economic products obtained by the various mining operations. Required of Junior civil and Sophomore mining engineers. 1st term, five hours, at 11:15. Professor Haworth.

4.—ECONOMIC GEOLOGY. A general study of the metallic and non-metallic products of the mine, quarry, and well, considered from a scientific and a practical standpoint, including the nature, origin, amount and geographic and geologic distribution of the same. Must be preceded by elementary chemistry and course 1, or mineralogy 1. Required of Junior mining engineers. 1st term, lectures and library work, three hours, Monday, Wednesday, and Friday, at 9; 2d term, two hours, Tuesday and Thursday, at 10:15. Professor Haworth.

5.—GEOLOGY. A study of elementary principles, including the characteristics and arrangement of rocks, the forces active in shaping the earth, and a history of the development of the earth and its inhabitants. An acquaintance with the elements of chemistry, zoölogy and botany will be of advantage in this course. Five hours, each term, at 11:15. Professor Haworth and Assistant Professor Todd.

Other courses in geology (the College) are open as optionals to engineering students. For details, see the courses in College section of this catalogue.

MATHEMATICS.

Professor MILLER.

Professor NEWSON.

Associate Professor VAN DER VRIES.

Assistant Professor ASHTON.

Mr. PITCHER.

Mr. MITCHELL.

2.—COLLEGE ALGEBRA. Rapid review of exponents, radicals, and quadratic equations; graphic representation; complex numbers; logarithms; determinants; theory of equations; numeral equations of higher degree. Required of all Freshmen in the School of Engineering. Wentworth's College Algebra, revised edition. Both terms. 1st term, eight sections, three hours, Monday, Wednesday, and Friday, at 8, 9, 11:15, 2:30, or 3:30; 2d term, three sections, three hours, Monday, Wednesday, and Friday, at 11:15 or 2:30.

3.—PLANE TRIGONOMETRY. The six trigonometric functions; principal formulas of plane trigonometry; solution of triangles and practical problems. Required of all Freshmen in the School of Engineering. Miller's Trigonometry. Both terms. Tuesday and Thursday. 1st term, eight sections, two hours, at 8, 9, 11:15, 2:30, or 3:30; 2d term, three sections, two hours, at 11:15 or 2:30.

4.—ANALYTIC GEOMETRY I. The straight line and circle; loci problems. Required of all Freshmen in the School of Engineering. Ashton's Analytic Geometry. Both terms. Tuesday and Thursday. 1st term, two sections, two hours, at 10:15 or 11:15; 2d term, five sections, two hours, at 8, 9, 10:15, 11:15, or 3:30.

5.—CALCULUS I. Differential calculus; fundamental principles; derivatives; applications to geometry and mechanics; maxima and minima; indeterminates; series. Required of all Freshmen in the School of Engineering. Granville's Calculus. Both terms. Monday, Wednesday, and Friday. 1st term, two sections, two hours, at 10:15 or 11:15; 2d term, five sections, two hours, at 8, 9, 10:15, 11:15, or 3:30.

6.—ANALYTIC GEOMETRY II. Conic sections; higher plane curves; solid analytics. Required of all Sophomores in the School of Engineering. Ashton's Analytic Geometry. Both terms. Tuesday and Thursday. 1st term, three sections, two hours, at 10:15; 2d term, two sections, two hours, at 9 or 10:15.

7.—CALCULUS II. Integral calculus; integration; definite in-

tegrals; applications to lengths, areas, and volumes. Required of all Sophomores in the School of Engineering. Granville's Calculus. Both terms. Monday, Wednesday, and Friday. 1st term, three sections, three hours, at 10:15; 2d term, two sections, three hours, at 9 or 10:15.

MECHANICS.

Associate Professor H. A. RICE.

Assistant Professor HOOD.

Assistant Professor HUBBARD.

Assistant Professor CORP.

Assistant Professor COCHRAN.

Assistant Professor NEWTON.

1.—MECHANICS. A study of the laws of statics and dynamics. Action of forces upon bodies and the resulting motions. Required of all engineering students. Senior for mining engineers, Junior for all others. 1st term, five hours, at 8 or 9. Associate Professor H. A. Rice and Assistant Professor Hubbard.

2.—STRENGTH OF MATERIALS. The theory of resistance to stress and applications to engineering construction. Required of all engineering students. Senior for mining engineers, Junior for all others. 2d term, five hours, at 8 or 10:15. Associate Professor H. A. Rice.

3.—TESTING OF MATERIALS. A laboratory course to accompany course 2. The testing of iron, steel, wood and other materials of construction for resistance to tension, compression, torsion, bending, and shearing. Experimental determination of the limits of safe loading. The testing of paving brick. For all engineering students. Senior for mining engineers, Junior for all others. 2d term, four hours, Monday, Tuesday, Thursday, Friday, or Saturday. Assistant Professor Corp.

4.—HYDRAULICS. A study of the laws governing the pressure and flow of liquids and gases and the force of and resistance to their motion. Required of civil and mechanical and optional for mining engineering students. Senior, 1st term, (a), four hours, at 10:15. Assistant Professor Hubbard.

5.—HYDRAULIC LABORATORY. A course to accompany course 4 and the course in hydraulic machinery. Experimental work with the flow of water over weirs, through orifices and pipes, and in testing hydraulic machinery. Required of civil and mechanical engineering students. Senior, 1st term, two hours, Monday, Wednesday, or Friday, 3:30 to 5:30. Assistant Professor Corp.

6.—ELEMENTARY MECHANICS. An elementary course, requiring a knowledge of elementary physics and trigonometry. Freshman, 1st term, two hours, Tuesday and Thursday, at 8, 9, 10:15, 11:15, 3:30, or 4:30. Assistant Professors Hood, Cochran, and Newton.

MECHANICAL DRAWING.

Assistant Professor HOOD.

Assistant Professor NEWTON.

Assistant Professor COCHRAN.

1.—FREE-HAND DRAWING. Outline drawing with lead-pencil. Drawing of simple geometrical figures for hand and eye training. Drawing from the object, teaching accuracy in observation. Required of all engineering students. Freshman, first six weeks of 1st term, six hours. Assistant Professors Hood, Cochran, and Newton.

2.—ELEMENTARY MECHANICAL DRAWING. Accurate drawing of geometrical figures, teaching proper use of instruments. Drawing-board constructions for conic sections and other plane curves. Standard forms of lettering for titles. Continual practice in single-stroke free-hand lettering for notes on drawings. Required of all engineering students. Freshman, last fourteen weeks of 1st term, six hours. Assistant Professors Hood, Cochran, and Newton.

3.—DESCRIPTIVE GEOMETRY. Principles of projection. Execution of a number of original exercises. Required of all engineering students. Freshman, 2d term, three hours, Monday, Wednesday, and Friday, at 8, 9, 10:15, 11:15, 3:30, or 4:30. Assistant Professors Hood, Cochran, and Newton.

4.—MACHINE DRAWING. Drawing of machine details from sketches and copy; sketching of machine parts and preparation of working-drawings; tracing and blue-printing; notes and lectures on drafting-room methods. Detailing of machines from sketches, notes, and assembled drawings. Each student prepares complete drawings for some simple machine. Required of all engineering students. Freshman, 2d term, six hours. Assistant Professors Hood, Cochran, and Newton.

MECHANICAL ENGINEERING.

Professor WALKER.

Assistant Professor CORP.

Assistant Professor ———.

1.—MACHINE DRAWING. A continuation of course 4 in mechanical drawing. Detailing of machines from assembly drawings, followed by the preparation of complete working drawings for some simple machine. Required for mechanical, electrical, mining and chemical engineers. Sophomore, 1st term, six hours, Monday and Wednesday, 1:30 to 4:30, or Thursday, 1:30 to 4:30, and Saturday, 9 to 12. Assistant Professor ———.

2.—KINEMATICS. A study of the motion of machine parts and of methods of transmission of motion by gears, belts, cams, etc. A drawing-room course for mechanical and electrical students. Six hours. Text, Barr's Kinematics of Machinery. Sophomore, 2d term, Monday and Wednesday, or Tuesday and Thursday, 1:30 to 4:30. Assistant Professor ———.

3.—MECHANICS OF THE STEAM-ENGINE. The engine mechanism; valve motion; valve designing; analysis of forces due to steam pressure; crank-effort diagrams and fly-wheel design; engine balancing. Text, Halsey's Valve Gears, and Dalby's Balancing of Engines. Junior, 2d term, three hours, Monday and Wednesday, at 9, and Monday, 1:30 to 3:30. Professor Walker.

4.—MACHINE DESIGN. Designing and drawing of simple machine members, followed by the complete design of some machine. Students wishing to specialize in steam-power generation may substitute chemical analysis for this work during the second half-term. Six hours drawing. For students not taking course No. 8, one hour recitation and four hours drawing. Text, Kent's Mechanical Engineer's Handbook. Senior mechanical students, 1st term, Monday and Wednesday, 2:30 to 5:30. Text for electrical students, Benjamin's Machine Design. Senior electrical students, Tuesday and Thursday, 8 to 10, and Friday, at 1:30. Professor Walker and Assistant Professor ———.

5.—DESIGNING. Students specializing in power development will design either a steam-engine or a gas-engine, making complete drawings. Others will prepare plans for some type of shop or factory building involving steel construction, and including the design of a traveling crane for the handling of material. Senior, 2d term, eight hours, Monday and Thursday, 1:30 to 5:30. Professor Walker.

6.—STEAM MACHINERY. Types of boilers and engines; principles of operation and construction; care and management; a careful study of the methods of construction; boiler and engine accessories; power of the engine; use of the engine indicator. Recitations, lectures, and exercises in the engineering laboratory. Text, Spangler's Elements of Steam Engineering. Sophomore, 2d term, three hours, Monday, Wednesday, and Friday, at 10:15 or 11:15. Assistant Professor ———.

7.—ENGINES AND BOILERS. Theory of heat engines; valve motions; governors; dynamics of moving parts; indicator and cylinder analysis; types of engines; accessories and connections. Boilers: General construction, care, and management; accessory apparatus; fuels. Lectures, recitations, and five half-days in the engineering laboratory. Must be preceded by physics 1 and 2. Required of civil engineering students. Junior, 2d term, five hours, at 11:15. Assistant Professor Corp.

8.—GENERAL MACHINE DESIGN. Proportioning and designing machine parts, fastenings, etc., for durability and strength; designing of gears, belt and rope transmission systems, shafting, shrink and forced fits, shaft couplings, fly-wheels, cylinders, and riveted joints. Recitations and problems. Text, Jones's Machine Design, vol. II. Senior, 1st term, three hours, Monday, Wednesday, and Friday, at 9. Assistant Professor Corp.

9.—THE GAS-ENGINE. Power, efficiency and economy of the gas-engine; study of the forces produced by gas pressure and inertia; structural design. Recitations and lectures. Text, Lucke's Gas-engine Design. Senior, 1st term, two hours, Tuesday and Thursday, at 9. Professor Walker.

10.—HYDRAULIC MACHINERY. A study of types of pumping machinery, with special reference to city water-supply, sewerage and irrigation plants. The questions of first cost and maintenance of plant and economy in operation are fully discussed. Also a study of water-power development and methods of designing turbines. Lectures, assigned reading, and reports. Senior, 1st term, (b), four hours, at 10:15. Professor Walker.

11.—THERMODYNAMICS. Study of the relations of heat phenomena. Theory of gases and vapors. Theory of heat engines and discussion of heat efficiencies. Must be preceded by physics 1 and 2 and calculus. Lectures, recitations, and problems. Texts, Reeves's Thermodynamics. Senior, 1st term, four hours, at 11:15. Professor Walker.

12.—ADVANCED STEAM ENGINEERING. Study of heat losses in the steam-engine, with methods of reducing the same; compounding; superheating; jacketing; design of reciprocating engines; the steam jet; form of nozzle for adiabatic jet; design of the steam-turbine. Recitations and lectures. Texts, Thomas's Steam Turbines, Reeves's Thermodynamics, and Kent's Mechanical Engineer's Handbook. Senior, 2d term, three hours, Tuesday and Thursday, 8 to 10. Professor Walker.

13.—ENGINEERING PRACTICE. Power-house equipment and construction. Power development by water, steam and gas considered in relation to adaptability. Application of power to machinery by mechanical and by electrical transmission compared with reference to economy. Influence of modern methods on cost of manufacturing. Senior, 2d term, (a), four hours, at 11:15. Professor Walker.

14.—ENGINEERING LABORATORY. (a) Theory and use of planimeters; calibration of apparatus; cement testing; valve setting; (b) For Senior electricals, efficiency tests of steam-boiler and engine injector, and gasoline-engine, with complete thermal analysis. For Junior mechanicals, flue-gas analysis, proximate analysis of coal, coal calorimetry, and tests for physical properties of lubricating oils. 1st term, four hours, Tuesday or Thursday, 1:30 to 5:30. Assistant Professor Corp.

15.—ENGINEERING LABORATORY. Complete testing of lubricants; fuel calorimetry; efficiency tests of steam-boiler, engine (with Hirn's analysis), steam-pump, gasoline-engine, and air-compressor. Chart study of steam-plant efficiency. Special subjects for investigation are assigned, to test the student's capacity for original work. Senior, 2d term, four hours, Wednesday, 1:30 to 5:30. Professor Walker.

16.—MECHANICS OF MACHINERY. A brief course for electrical students, covering, in a general way, the subjects mentioned in courses 2, 9, and 12. Junior, 2d term, three hours, Monday, Wednesday, and Friday, at 8. Professor Walker.

17.—THESIS WORK. Senior, 1st term, Friday, 1:30 to 3:30; 2d term, Friday, 1:30 to 5:30. Professor Walker.

SUMMER VACATION WORK. Two months to be spent in regular work in some shop or manufacturing plant of good standing. A report on this work, with a certified statement from the shop foreman or the superintendent, must be presented before credit can be given.

For courses open to graduate students, see elsewhere in this catalogue.

MINERALOGY.

Assistant Professor TODD.

1.—ELEMENTARY MINERALOGY I. A brief course in crystallography, blowpipe analysis, and systematic mineralogy, consisting of lectures and laboratory work, as follows: *Crystallography*.—A study of the properties of crystals and the crystal systems, with laboratory exercises, using natural crystals and crystal models. Considerable work is required in drawing crystal forms and measuring crystal angles. Moses and Parsons's Text-book on Mineralogy will be used. *Chemical Mineralogy*.—In blowpipe analysis sufficient practice is required to familiarize the student with all the ordinary blowpipe tests for mineral identifications. *Physical Mineralogy*.—The student is required to become thoroughly familiar with the methods of identifying all the more common minerals by their physical characters, such as crystalline form, cleavage, gravity, luster, streak, hardness, and color. The uses, localities and productions of the minerals of economic importance are discussed. Required of mining and chemical engineers, Sophomore. Open to Juniors and Seniors who have had chemistry through qualitative analysis. It may also be used for a graduate credit, provided some extra time is given to it. Sophomore, 2d term, ten hours, 3:30 to 5:30. Assistant Professor Todd.

METALLURGY.

Assistant Professor MCFARLAND.

19.—METALLURGY I. General metallurgy and metallurgy of iron and steel. Properties of metals and alloys, metallurgical terms and processes, furnace types, refractory materials and slags, fuels and thermal measurements, calculation of furnace charges, etc., followed by a study of iron and its ores; methods for manufacture of pig iron and wrought iron; manufacture of steel by crucible, Bessemer and open-hearth processes; special steels and special processes; heat treatment and metallography of steel. Must be preceded by chemistry 3. Required of mechanical engineers, Junior, and chemical engineers, Senior; optional in the College and for mining engineers, Senior. 1st term, five hours, daily, at 11:15. Assistant Professor McFarland.

20.—METALLURGY II. Metallurgy of lead, zinc, and copper, followed by metallurgy of silver, gold, mercury, and tin. Study

of principal ores and methods of extraction and refining, amalgamation, chlorination and cyanide processes, pyritic smelting, etc. Must be preceded by chemistry 4. Required of mining engineers. Senior; optional in the College and for chemical engineers, Senior, 2d term, five hours, daily, at 11:15. Assistant Professor McFarland.

21.—METALLURGICAL LABORATORY. Three hours. (Two 3-hour periods.) By appointment. Either term. This course includes: (a) Temperature measurements by thermo-electric, optical and fusion pyrometers, with calibration of instruments; (b) Preparation of slags and alloys, with a study of the relation of composition to structure, fusibility and other properties; (c) Study of roasting, reduction and oxidation reactions used in metallurgical processes; (d) Amalgamation, chlorination, cyaniding, and leaching; (e) The testing of ores to determine the proper metallurgical treatment. Optional. Open to Juniors, Seniors and graduate students who have taken metallurgy I or II. Assistant Professor McFarland.

MINING ENGINEERING.

Professor HAWORTH.

Associate Professor YOUNG.

COURSES FOR UNDERGRADUATES ONLY.

1.—MINING. (a) *Excavating, Boring, Blasting, and Surveying.* Excavation: Excavation of various kinds of earth, such as soils, clays, sands, and rocks, with or without ground-water; quarrying stone, etc., with various kinds of tools and machinery employed for same. Boring: Methods and appliances for prospect drilling for various deposits and for drilling oil-wells and gas-wells, including different varieties of tools and machinery employed, difficulties to be encountered, and the desirability of prospecting under various conditions. Blasting: A study of the various kinds of explosives used in mining and excavating, such as black powder and the various kinds of nitroglycerine explosives, including their manufacture, properties and modes of use, and the precautions necessary in handling them. Mine surveying: General principles of underground surveying and relation between underground and surface surveys; the construction of mine maps and mine sections. To be supplemented by field-work during summer vacation.

(b) *Shafting, Tunneling, and Mine Support.* Shafting: Shaft sinking; methods employed in sinking shafts through soft and

hard materials, dry or water-bearing, including the hoisting and handling of excavated material, and methods of shaft timbering and shaft lining. Tunneling: Methods of driving tunnels through different kinds of earth and rock, including drainage and ventilation, tunnel supports and linings, and methods of choosing locations for tunnels. Mine supports: Including a general study of the various methods of supporting all forms of underground openings by timbers, masonry, metallic linings, and other methods peculiarly adapted to special conditions. Lectures and recitations. Required of mining engineering students. Junior, 1st term, five hours, at 8. Associate Professor Young.

2.—ORE DRESSING. General methods and theories for separating different ores from foreign materials and for washing coals, clays and other products. It includes a study of hand dressing, crushing, screening, and the theory and practice of the various methods of concentration, and a study of the machinery for the same; the concentration of slimes; milling methods for gold and silver ores. Recitations, lectures and laboratory work. Richard's Ore Dressing will be used. Required of mining engineering students. Junior, 1st term, two hours, Tuesday and Thursday, at 9; 2d term, three hours, Monday, Wednesday, and Friday, at 10:15. Associate Professor Young.

3.—POWER, EXTRACTION, DRAINAGE AND VENTILATION. Power: Generation and transmission of power, including a study of steam, compressed air and electricity, as applied to mining. Also the development of power from water, with a study of the laws governing the flow of water and the measurement of streams. Extraction: Machinery and methods used in handling minerals on the surface and underground; tramways, cars, propelling forces; methods of loading and unloading cars; methods of storing mine products. Drainage: Sources, amount and character of mine waters, and methods of controlling the same; mine drainage by natural and artificial methods; water supply; inundations, and methods of escape from inundated mines. Ventilation: Underground gases and gases produced by blasting and other mining operations; methods of ventilation; mine explosions of fire-damp and dust; mine fires; relief and rescue in case of accident. Required of mining engineering students. Senior, 1st term, five hours, at 10:15. Associate Professor Young.

4.—DEVELOPING AND THE EXPLOITATION OF MINERAL PROPER-

TIES. A study of the best methods of prospecting, developing, sampling and working mines. Required of mining engineering students. Senior, 2d term, (a) five hours, at 11:15. Associate Professor Young.

5.—**MINE PLANT; MINE CONSTRUCTIONS:** (a) *Mine Plant.* A study of the various kinds of machinery employed in mine development and mine operation, and methods of placing the same, including machinery required for drilling, blasting, hoisting, drainage, and mine ventilation; and a study of large mining plants in the United States and abroad. (b) *Mine Constructions.* Building materials, foundations, mine building and constructions, with special reference to mine work. The design of mine plants. Optional for mining engineering students. Senior, 2d term, five hours, at 9. Associate Professor Young.

6.—**MINE ADMINISTRATION.** Mine accounts and management; care of sick and injured in case of accident; rules and regulations for equipping expeditions and maintaining camps. Optional for mining engineering students. Senior, 1st term, (a), five hours, by appointment. Associate Professor Young.

7.—**COAL MINING.** A study of the methods of working deposits of anthracite and bituminous coals; long-wall and room-and-pillar methods; methods of handling coal underground and on the surface; ventilation of mines; the gases met with, their properties and methods of detecting them; safety lamps; the properties of explosives; methods of artificial ventilation; the cause and prevention of explosions. 2d term, five hours, by appointment. May be substituted for mining 3 by mining students, and is optional for those who may be prepared for it. Associate Professor Young.

8.—**PROFESSIONAL THESIS.** Before graduation a thesis will be required of each student, embodying an elaborate description of some phase of mining or metallurgical processes, or of ore formation, or a description of the mineralogy or geology of some mining locality. It is presumed that material will largely be gathered for thesis work during the summer vacation excursions, but ideal plants may be constructed or mines developed in exceptional cases. The thesis work will be under the supervision of the department of geology and mining. It should be begun during the first term of the Senior year. A typewritten copy of the thesis, conforming to the standard of the engineering school, must be presented to the head of the department of

geology and mining not later than May 15, and must be approved by the head of the department before graduation.

9.—SUMMER EXCURSION WORK. Before graduation each student is required to give evidence of having had some practical experience in some phase of mining operations, equal in extent to what might be acquired in six weeks' special study of one or more good mining plants or mining locations. This knowledge may be gained: first, by a summer school or excursion to some well-known mining locality and a careful investigation of mining methods, ore deposits and smelting processes, etc.; or, second, by seeking employment in practical work of such a nature that the desired amount of knowledge and skill may be acquired. The first presumes a body of students, accompanied by an instructor, will devote sufficient time to the subject during the summer vacation between the Junior and Senior years. Students choosing the second method should consult with their instructor in advance and have outlined to them the ground necessary to be gone over in order that they may make observations more carefully.

10.—MINING LAW. A course outlining the laws relating to the mining industries. Lectures, one hour per week, 2d term, in alternate years. Given in 1909. Mining students must take this course before graduating. Professor Moore.

MODERN FOREIGN LANGUAGES.

The course in French, German or Spanish to be taken by engineering students during the Freshman year can only be determined after consultation in individual cases, the choice depending upon the particular language or grouping of languages offered for entrance. In general, one offering three units of Latin may begin any one of the above-named languages. One offering one or more units of French or German will find opportunity to continue such language.

PHYSICS.

Professor ———.

Associate Professor M. E. RICE.

Assistant Professor STIMPSON.

Mr. MCCOLLUM.

3.—GENERAL PHYSICS. A fundamental course of experimental lectures, recitations and problem working. Prerequisites, plane trigonometry and some knowledge of analytical geometry and calculus. Sophomore, 1st term, five hours, Monday, Tuesday, Wednesday, and Thursday, at 10:15 or 11:15, and

two hours of laboratory per week. Associate Professor M. E. Rice, Assistant Professor Stimpson and Mr. McCollum.

4.—GENERAL PHYSICS. A continuation of course 3. Sophomore, 1st term, five hours, Monday, Tuesday, Wednesday, and Thursday, at 10:15 or 11:15, and two hours of laboratory per week. Associate Professor M. E. Rice, Assistant Professor Stimpson, and Mr. McCollum.

7.—THEORY OF ELECTRICITY AND MAGNETISM. 1st term, three hours, Monday, Wednesday, and Friday, at 9. Associate Professor M. E. Rice.

8.—ELECTRICAL MEASUREMENTS. A laboratory course coördinate with 7. Four or eight hours per week (two or four credit hours), by appointment. Mr. McCollum.

SHOP WORK.

Mr. WARD.

Mr. JONES.

Mr. HANSON.

SHOP I.—FORGING. The regular beginning forging course for students in engineering. Twenty-one graded exercises will be given, consisting of working iron, mild steel, and tool-steel; pointing, bending, twisting, heading, fullering, swaging, welding, etc.; making tool-steel tools, such as punches, cold-chisels, lathe tools, and pliers. Processes used are hardening, tempering, annealing and case-hardening. Half-hour talks are given each day on such subjects as building a fire, blacksmith coal and coke, the construction of iron and how to work it, also that of mild steel and tool-steel. Mr. Hanson.

SHOP II.—PATTERN-MAKING. This course is a part of the regular work required of all students in the School of Engineering. It consists of (a) Descriptive lectures and demonstrations on the properties of wood; selection and comparative values of different woods; practical construction of patterns to prevent distortion by shrinkage or warping; the relation of the pattern to foundry practice; the allowance for draft, shrinkage, and finish; the use of cores and making of core-boxes, etc. (b) A course of exercises in joinery calculated to give dexterity in the use of the plane, saw, chisel, gouge, and the small hand tools used in the construction of patterns; the correct method of grinding, sharpening and adjusting the tools used. (c) A comprehensive course of exercises in wood-turning, preparatory to the use of the lathe in pattern work. (d) The making of two or

more patterns of the representative types, embracing all the essential features peculiar to pattern work, together with the necessary core-boxes, prints, and appurtenances. Assistant Professor Jones.

SHOP III.—BENCH WORK. Exercise in filing, key fitting, drilling holes, riveting, chipping, and scraping to a true surface. Also, making calipers and side cutting pliers. This work brings in use the steel hand tools and pliers made in Shop I, the forging, filing and tempering of a pin-drill and cutters for the pliers. Also the use of machine tools in drilling, grinding, and polishing. Assistant Professor Ward.

SHOP IV.—LATHE WORK. The use and testing of the tools which have been made in Shop I, centering work, turning on centers to fit standard gages, turning tapers and curved surfaces, turning shafting, cutting threads, making small cap-screws and set-screws. Assistant Professor Ward.

SHOP V.—LATHE AND MACHINE TOOL WORK. Making close fits with ordinary inside and outside calipers; cutting special screws and threads inside; machining, boring and reaming the cast-iron parts of machinery under construction, from blue-prints and sketches. Assistant Professor Ward.

SHOP VI.—HEAVY LATHE WORK, PLANER AND MILLING-MACHINE WORK. Tool and jig making; grinding hardened work; making mandrels, reamers, taps, and special tools for the general shop use. Required only of mechanical engineering students. Assistant Professor Ward.

TECHNICAL REPORTS AND THESES.

Reports upon subjects assigned by the special departments, required of all students, one in each term of the Sophomore, one in the Junior and one in the Senior year; one thesis required of each student in the second term of the Senior year.

ENGINEERING EXPERIMENT STATION.

EXPERIMENT STATION STAFF.

FRANK STRONG, Ph. D., President.
FRANK O. MARVIN, A. M., Director. Civil Engineering.
EDGAR H. S. BAILEY, Ph. D., Chemical Engineering.
ERASMUS HAWORTH, Ph. D., Mining Engineering.
PERLEY F. WALKER, M. M. E., Mechanical Engineering.
———, Electrical Engineering.

PURPOSES.

This new department of University activity has been established for two reasons: First, to correlate and group together in a more systematic way the results of scientific investigation that heretofore has been done under the various departments; second, to foster, enlarge and direct this work, especially along lines of value to this state, and to supervise the publication and distribution of the results of engineering and industrial research work.

Considerable work of practical value has already been done in the past few years; such as investigations of Kansas building stone, of Kansas stone for macadam roads, of paving brick, the action of repeated stresses on concrete, of the shearing strength of concrete, of the properties of hydraulic cements, of the purification of sewage, of variations in the flow of sewage, of the waters of the state, both surface and underground, of the composition of Kansas oils and gases, of the flow of gases through nozzles, of the lubricating value of Kansas oils, of the application of chemistry to manufacturing industries, etc.

Much of this kind of material lies incomplete and unused in department records for the lack of funds to complete the investigations and an efficient organization to stimulate the work and bring out results for the public benefit.

The field to be covered, and in which there are many questions arising that can be investigated to the best advantage in the well-equipped laboratories of the University, is a very large one, including such subjects as structural materials, coals, ores

of lead and zinc, gypsum, clays, hydraulic cements, oils; gases, as they are used for illuminants or as they produce explosions in mines or elsewhere; the waters of the state, water supplies, both for potable and mechanical uses; the character and disposal of sewage and other waters; the influence of bacterial action on the design and operation of public sanitary works; hydraulic power plants, applications of electricity to service, chemistry in the arts, and many other lines of investigation of direct utility.

It is hoped that this new departure may have the support of the state, both by affording time from the routine work to University men for these special investigations and by way of providing the necessary funds with which to carry them on.

IV. THE SCHOOL OF FINE ARTS.

FACULTY.

FRANK STRONG, Ph. D., President.

CHARLES S. SKILTON, A. B., Dean. Professor of History of the Fine Arts, Musical Theory, and Organ.

CARL A. PREYER, Professor of Piano, Musical Theory, Counterpoint, Canon, and Fugue.

CHARLES E. HUBACH, Professor of Voice.

WILLIAM A. GRIFFITH, Professor of Drawing and Painting.

ALEXANDER M. WILCOX, Ph. D., Professor of Greek Language and Literature.

CHARLES G. DUNLAP, Litt. D., Professor of English Literature.

EDWIN M. HOPKINS, Ph. D., Professor of Rhetoric and English Language.

ARVIN S. OLIN, A. M., Professor of Education.

EUGENIE GALLOO, A. M., Professor of Romance Languages and Literatures.

RAPHAEL D. O'LEARY, A. B., Associate Professor of English.

ELMER F. ENGEL, A. M., Associate Professor of German.

EDGAR G. FRAZIER, Ph. B., Associate Professor of Public Speaking.

ARCHIBALD HOGG, A. B., Assistant Professor of Philosophy.

ALBERTA L. CORBIN, Ph. D., Assistant Professor of German.

MARGARET LYNN, A. M., Assistant Professor of English.

CHARLES H. GRAY, Ph. D., Assistant Professor of English.

MARY C. FISH, Assistant Professor of Physical Education.

HARRIET GREISSINGER, Mus. B., Assistant Professor of Piano.

BLANCHE LYONS, Assistant Professor of Voice.

HELEN PHIPPS, Instructor in Violin.

ALFRED BUCH, Instructor in Violoncello.

MAUDE B. COOKE, Assistant in Piano.

MAUDE MILLER, Mus. B., Assistant in Piano.

JULIA RIGHTER, Mus. B., Assistant in Piano.

LOUISE WEIDEMANN, Mus. B., Assistant in Piano.

AUGUSTA FLINTOM, Mus. B., Assistant in Voice.

DEPARTMENTS.

The School of Fine Arts is made up of the following departments: (1) Music. (2) Drawing and Painting. (3) Elocution.

DEGREES.

The courses of study in the School of Fine Arts lead to the following degrees:

Master of music.

Bachelor of music.

Bachelor of painting.

Teacher's certificate of completion of two-year course.

REQUIREMENTS FOR ADMISSION.

There are two methods of admission to the School of Fine Arts: First, by examination; second, by certificate.

BY EXAMINATION. All students who cannot present certificates from accredited schools will be examined in the subjects required for entrance. The times and place of examination are set forth on pages 80 and 81 of this catalogue.

BY CERTIFICATE. Students will be admitted without examination on certificates from high school or other preparatory school, signed by the proper school officer. The general plan is the same as that noted under "The College."

UNITS REQUIRED FOR ADMISSION.

Eight and one-half units of high-school work are required for full admission to the School of Fine Arts. (See heading "Special Students.") The eight and one-half units must include the following:

Three units in English from group I.

Two and one-half units in mathematics from group II.

One unit in history from group VI.

Two units from any courses remaining, as outlined in the following:

SUBJECTS OFFERED.

GROUP I, English.	{ English, four units. }	Three units are re- quired.
GROUP II, Mathe- matics.	{ Algebra, one and one- half units. Plane geometry, one unit. Solid geometry, one- half unit. Plane trigonometry, one- half unit. Advanced algebra, one- half unit. }	The algebra, one and one-half units, and plane geometry, one unit, are re- quired.
GROUP III, Foreign Languages.	{ Latin, four units. Greek, three units. German, three units. French, three units. }	All optional, except that students who take German in the University must offer three units of Latin for entrance.
GROUP IV, Physical Sciences.	{ Physical geography, one unit. Physics, one unit. Chemistry, one unit. }	All optional.
GROUP V, Biological Sciences.	{ Botany, one unit. Zoölogy, one unit. Physiology, one unit. }	All optional.
GROUP VI, History.	{ Greek and Roman, one unit. Mediæval and modern, one unit. English, one unit. American, one unit. Economics, one unit. }	One unit is re- quired.

ADDITIONAL REQUIREMENTS.

IN VIOLIN. Applicants must add to the general requirements stated above an ability to play correctly selections from the Wichtl School, book I, and from Kayser, Thirty-six Studies, book I.

IN PIANO AND ORGAN. In addition to the technical requirements, consisting of the major and the harmonic and melodic minor scales, the triad, dominant seventh and diminished arpeggios, candidates will be required to play in tempo, and with correct touch, fingering, and phrasing, selections from the fol-

lowing, or equivalents: Loeschorn, op. 66; Bach's Easy Preludes; Heller, op. 47; Mozart, Sonata in A major, or equivalents.

IN VOICE. Applicants for the regular course in voice must be able to play piano accompaniments of moderate difficulty. Any deficiency in this respect must be made up by private lessons.

IN LATIN. All students expecting to take German in the regular course must offer three units of Latin.

SPECIAL STUDENTS.

Students need not be deterred from seeking to enter the School of Fine Arts of the University because they cannot satisfy all the requirements for full admission to that school. Those requirements are for persons who are candidates for a degree in music or painting. All persons who desire to pursue a special line of work, without conforming to the requirements for entrance, or following a prescribed course, may apply for admission to the School of Fine Arts as special students. The admission of such persons is under the control of the Dean, to whom they should apply, and whose certificate of acceptance must be presented to the Registrar before registration.

Applicants for standing as special students must present satisfactory evidence of proper preparation for the studies desired. Special students are subject to the same regulations as regular students as to quality of work, attendance at recitations, and examinations, if they desire credit toward a degree.

ENSEMBLE PLAYING.

An ensemble class meets for the study of concerted music. Four- and eight-hand piano music are studied, and trios played with violin and violoncello. Thus pupils become acquainted with many masterpieces which are often inaccessible to music students, and acquire habits of sight-reading and accompanying, which are invaluable to the musician. Advanced students also have the opportunity of playing concertos with the University Orchestra.

CLUBS.

THE UNIVERSITY ORCHESTRA is an organization of students, directed by the Dean, which gives two concerts each year, furnishes music for commencement and other occasions, and accompanies the annual performance of opera.

Classical and popular music is studied. All students who play orchestral instruments with sufficient skill are eligible.

THE GLEE CLUB is composed of young men, under the direction of the professor of voice training. They give two concerts a year, and make a concert tour of the state.

THE GIRLS' GLEE CLUB is composed of young lady students, under the direction of the professor of voice training. They give annual concerts.

VESPER CHORUS. The Vesper Chorus is composed of about thirty of the leading singers of the city and University, and takes part in the monthly vesper services on Sunday afternoon. It is under the direction of the professor of voice training.

THE MANDOLIN CLUB is composed of mandolin, banjo and guitar players, under a leader elected by the members. They give two concerts a year, and make a concert tour.

THE FESTIVAL CHORUS is an organization of students and singers from the city, numbering about one hundred, under the direction of the Dean, which meets once a week during the second term to prepare the oratorios and cantatas for the May music festival.

OPERA. The voice students give an annual performance of opera under the direction of the instructors in voice and elocution, accompanied by the University Orchestra. This year the opera was "Patience," by Gilbert and Sullivan.

THE NORMAL CLASS.

The normal class is designed especially for students fitting themselves for teachers, although all students of the school are required to attend. The work consists of lectures on the methods of teaching; papers and discussions by students; careful study of the systems in use in the school, which, in music, aim equally to combine the melodic and musical elements with that of the technical; the examination of other systems, always with a view of shortening the processes and roads to a high grade of musical execution. Once a month the conference is devoted to a discussion of current events.

PAYMENT OF TUITION.

No student will be accepted for less than a half-term.

The receipt of the treasurer of the School of Fine Arts must be presented to secure enrolment in classes or for private lessons at the beginning of each quarter. No reduction is made for lessons missed except in case of illness, when the School of Fine Arts shares the loss equally with the pupil.

GENERAL.

It is required of all candidates for a degree that the last two years be spent in residence at the University.

During the first year piano students will take their lessons from an assistant. For the second year students will be graded in the collegiate and artists' courses according to their standing; in the collegiate course students will continue to receive all instruction from assistants; in the artists' course students will take one lesson with Professor Preyer and one with an assistant. In the third and fourth years all piano lessons are with Professor Preyer, but no student will be admitted who has not completed the work of the preceding year. Students who are behind in piano at the end of the second year will have to become special students in piano until the work is made up before they take any of the studies of the third year.

Voice students may take their lessons during the first two years either with Professor Hubach or Mrs. Lyons. In the last two years all voice lessons are with Professor Hubach.

The year is divided into four quarters, two quarters in each term.

The school does not furnish pianos for practice at the building, excepting a piano with organ pedals, but instruments can be rented in town for from three to five dollars a month, and grand pianofortes at from seven to ten dollars a month. Pianos rented of private parties, or in connection with board, may often be secured at even lower rates. If desired, several students may unite in renting an instrument, thus materially reducing the expense.

Students in drawing and painting will be required to furnish their own materials, except easels and drawing-boards.

All art work, when finished, is under the control of the instructors until after the close of the public exhibition of student work, at the end of the academic year.

EQUIPMENT.

IN MUSIC. The department of music of the University occupies a building of its own—North College. The down-town music studios, in the Dick building, are used by the assistant instructors. The school is well equipped with pianos, including six concert grands; a three-manual pipe-organ, built by King & Sons, Elmira, N. Y.; a piano with organ pedals; charts for sight-reading, for illustrating vocal, pianoforte and lecture courses;

about 100 lantern slides for use in connection with lectures in architecture, the graphic arts, and musical history.

IN DRAWING AND PAINTING. The department of drawing and painting offers instruction in free-hand drawing in charcoal, pencil, and pen and ink; painting in oil and water-colors from still life, the living model, the landscape; ornamental design, perspective, and pictorial composition.

THE STUDIOS are located on the third floor of Snow Hall, and are well equipped with plaster casts from the antique, articles from still life, books and photographs upon the fine and applied arts.

THE GREENHOUSE is on the same floor, and here plants are cultivated for the use of the class in ornamental design.

One of the studios can be darkened for a lecture-room. It is equipped with a lantern and several hundred slides.

There is a force-press for the printing of etchings and another for color-printing. The students have the use of these presses for the reproduction of their designs.

The mounted natural-history specimens furnish a great deal of valuable material for the students in painting and motifs for the classes in design.

In the studios there are sixty-five casts, among which will be found the Nike of Samothrace; Venus di Milo; Diana Robing; Augustus Cæsar; Tomb of Lorenzo de Medici, by Michael Angelo; Nike, by Praxiteles; several Panagra figures; three Lions, by Barye; Satyr and Narcissus, from Pompeii; Laughing Faun, in the Louvre; Clytie, from the British Museum; Minerva; Sappho; Laughing Boy, by Donatello; Maiden of Lilli, attributed to Raphael; Dante; the Unknown Woman, in the Louvre; Washington and Franklin, by Houdon; the large Bacchic Procession, from the Naples museum; Bacchante, from the Villa Albani, Rome; Boys playing on trumpets, by Luca della Robbia; Madonna and child, with two angels, and the Annunciation, by Andrea della Robbia; Cherub playing on double pipe, by Donatello; Nymph, by Jean Goujon; French Peasant, by Carpeaux; the head of Cæsar, from the Trajan column; busts of Brutus, Agrippa, Apollo Belvedere; also, a number of studies of ornament and architectural details.

Pupils will have access to the classical museum, containing a good collection of antique casts—in the round, including the Venus di Milo, the Borghese Warrior, the Emperor Augustus, the Reclining Young Man of the East Pediment of the Parthe-

non, and the so-called Germanicus; in relief, parts of the frieze of the Parthenon, a part of a Bacchic Procession, three plates in high relief, Metopes of the Parthenon, etc.

Busts of Young Augustus, Niobe, Apollo Belvedere, Clytie, Eros, Homer, Socrates, Cicero, and many of Roman emperors.

Masks of Brutus, Niobe, Laocoon, and Agrippa.

Small full figures of Venus di Milo, Diana Robing, and Narcissus.

Models of the Acropolis of Athens, the Quoit Thrower of Myron, Amazon Antinous, Diana of Gabii, and others; colored charts of Greek and Roman architecture.

PLATES. Seventy colors, by Reinhard, illustrating Roman architecture; 89 plates of forms, painting and decoration of Greek vases; 471 plates illustrating Greek and Roman antiquities; 100 plates illustrative of art mythology; 2000 illustrations of classical monuments; manuscript facsimiles, inscriptions, etc.; phototypes of sculpture and photography.

THE LIBRARY. The University Library contains a good collection of works on art, including art exposition and criticism, musical history, vocal and orchestral scores of operas, symphonies, chamber music, oratorios and cantatas, pianoforte and organ music, and collections of standard merit. This collection is annually increased.

CONCERTS AND RECITALS.

Concerts are frequently given in Recital Hall and in University Hall by the professors and advanced students. Concert courses which are arranged for at the University, and the nearness of Lawrence to Kansas City and Topeka, afford students an opportunity to hear many noted musicians.

Recitals are given monthly by the students of the school, at which works studied in the classroom are performed before a small audience of fellow students and their friends. Every student is required to attend these recitals and all concerts, and take part in the programs at least twice a year, and to present each term a record of attendance. These semipublic appearances are of great assistance in acquiring the ease and self-possession so essential to a successful public performance.

Towards the end of the College year a musical festival of two days' duration is given, in which a leading orchestra and noted soloists take part with the Festival Chorus, and several masterpieces of choral and orchestral music are rendered.

ART EXHIBITIONS.

An exhibition of works of art will be held in March every year at the University, together with a course of lectures upon subjects relating to the fine arts. Exhibitions of the work of the students are held from time to time.

EXPENSES.

By legislative enactment, a matriculation fee of five dollars (to be paid but once) must be charged each student of Kansas entering the School of Fine Arts. Non-residents of Kansas must pay a matriculation fee of ten dollars.

The instructors in the School of Fine Arts receive compensation from the state for only part of the work of the courses, and the remainder must be paid for at rates indicated below.

All bills are payable quarterly in advance.

No fees will be refunded if the student leaves before the end of a half-term. The receipt of the treasurer of the School of Fine Arts must be presented each quarter to secure enrolment in classes or for private lessons. No lessons are given during the week of the semiannual examinations.

Rates for regular students (two half-hour lessons a week) :

First year....	Piano, per quarter, lessons with assistants,	\$25 00
	Voice, per quarter.....	31 00
	Violin, per quarter.....	25 00
	Violoncello, per quarter.....	25 00
	Elocution, per quarter.....	31 00
	Drawing and painting, per quarter.....	15 00
Second year..	Piano, per quarter.....	31 00
	Other rates the same as for first year.	
Third year...	Piano, per quarter.....	33 50
	Organ, per quarter.....	33 50
	Voice, per quarter.....	31 00
	Violin, per quarter.....	31 00
	Violoncello, per quarter.....	31 00
	Drawing and painting, per quarter.....	15 00
Fourth year..	Free to Kansas students. For non-resi-	
	dents, the same as for the third year.	

RATES FOR SPECIAL STUDENTS.

Preliminary years and private lessons with assistants:

Piano, two lessons a week, per quarter...	\$13 50 and	\$18 00
“ one lesson a week, per quarter.....	9 00 and	7 00
Voice, two lessons a week, per quarter.....		18 00
“ one lesson a week, per quarter.....		10 00

Lessons with heads of departments (one-half-hour lessons) :

Piano, two lessons a week, per quarter.....	\$28 00
“ one lesson a week, per quarter.....	16 00
Voice, two lessons a week, per quarter.....	28 00
“ one lesson a week, per quarter.....	16 00
Organ, two lessons a week, per quarter.....	28 00
“ one lesson a week, per quarter.....	16 00
Violin or violoncello, two lessons a week, per quarter..	24 00
“ “ one lesson a week, per quarter...	12 00
Harmony, counterpoint, composition, instrumentation—	
Per quarter	28 00
In class	10 00
Elocution, two lessons a week, per quarter.....	28 00
“ one lesson a week, per quarter.....	16 00
Three lessons a week (hour lessons) :	
Painting, in class.....	15 00
Drawing, Saturday class, eighteen weeks.....	7 50
Physical education, private.....	25 00
“ “ in class	5 00

OTHER EXPENSES. There are no dormitories connected with the University. Students find accommodations in the boarding-houses and homes of Lawrence. Information concerning the location of rooming- and boarding-places may be had at the office of the Registrar.

The average price of board, rooms, light and fuel may be placed at from \$4 to \$4.50 a week. Some persons who furnish plain rooms and good, plain food receive students at \$3 and \$3.50 a week. Day board in private families and at city restaurants may be obtained for \$3 to \$4 a week. Day board in clubs varies from \$2.75 to \$3.50 a week. Furnished rooms, usually occupied by two students, range from \$4 to \$15 a month. Unfurnished rooms rent for \$1.50 to \$3 a month. Students who can supply their own furniture and buy and prepare provisions for the table themselves can attend the University for very little cost in money.

WHAT THE SCHOOL OFFERS.

IN MUSIC.

Instruction in piano, organ, violin and violoncello playing, and in singing.

Opportunities for performing in public at small recitals and large concerts.

Opportunities for hearing frequent concerts of all kinds of music, and many noted artists.

Opportunities for taking part in practice of an orchestra and chorus.

Opportunities for taking part in a performance of opera.

A complete knowledge of the theory and history of music.

Training in methods of teaching.

Contact with the life of a large university.

Access to a large musical library.

PIANO STUDENTS are trained not only in solo playing, but in duets, duos, quartets, and ensemble playing with orchestral instruments. Advanced players have the opportunity of playing concertos with the University Orchestra. A special course of piano recitals is given each year for the benefit of piano students.

ORGAN STUDENTS have the opportunity of practicing on the three-manual electric pipe-organ in University Hall. Students can also arrange to practice on the organ of the church which they attend. Nearly all of the church organs in Lawrence are played by former students of this department, and advanced players will find no difficulty in securing positions.

VIOLIN AND VIOLONCELLO STUDENTS, when sufficiently advanced, receive training in ensemble playing with piano and other instruments, and are admitted to the University Orchestra. Advanced students receive instruction in conducting the orchestra.

VOICE STUDENTS, aside from their solo work, have the opportunity of singing in the church choirs of the city, in the University Glee Club, Vesper Chorus, and Festival Chorus. Each year the musical people of the University give a public performance of an opera.

THEORY STUDENTS receive a complete training in the art of composition in all the different forms of music, and have the op-

portunity of hearing their compositions performed, when they are of sufficient merit.

ALL STUDENTS can attend the large concerts at Topeka and Kansas City, where such artists as Schumann-Heink, Malek, Walter Damrosch and others are frequently heard. The spring festival at Lawrence is an important feature of the musical life of the state. A chorus of 100 voices, an orchestra of national reputation, and noted soloists render several of the great masterpieces of choral and orchestral music, an opportunity which comes seldom to music students outside of the largest cities.

IN DRAWING AND PAINTING.

DRAWING.—In the studios of the drawing and painting department there are sixty-five casts from antique and modern sculpture. From these pupils make drawings until they are able to draw from the

LIVING MODEL.—For advanced pupils a model poses every day throughout the year. As soon as pupils can draw from a plaster cast, one-half their time is spent

PAINTING with oil- or water-colors from still-life objects, then from the living model until spring, when the whole class is taken out of doors to paint

LANDSCAPES, for which there is ample material near the University, as the country surrounding Lawrence is very picturesque. The pupils who study drawing for the purpose of

ILLUSTRATING do the same work as the others, with the exception that pen and ink are used in place of colors. Every year there is held at the University, under the direction of the department of drawing and painting, an

EXHIBITION of works of art. Last year the exhibition consisted of 100 famous American paintings. The library, containing several hundred books upon the fine arts, is annually increased, and lectures upon some subject relating to the fine arts are given throughout the year.

IN ELOCUTION.

SHAKSPERE AND THE MODERN DRAMA. Students in the department of elocution have opportunity throughout the year to hear numerous performances of Shakspeare and the modern drama as interpreted by well-known actors and actresses.

THE UNIVERSITY DRAMATIC CLUBS, open to students of the University, give plays during the year, and offer opportunity

for the practical study of the technique of acting. The following plays have been given by the clubs: 1901-'02, "Shore Acres," by James Herne; 1902-'03, "A Night Off," by Augustine Daly; 1903, "Alabama," by Augustus Thomas; 1904, "Rosemary," by Lewis N. Parker and Murray Carson; 1905, "Comforts of Home," by William Gillette; 1906, "An American Citizen," by Mary Lucetta Riley; 1907, "David Garrick," by Thomas Robertson; 1908, "Green Eyes," and "The Little Minister."

THE ANNUAL FARCE, given by the students of the Junior class, on the evening of the Junior promenade.

THE SENIOR PLAY, written by the class-play committee, and given as one of the features of commencement week.

THE LITERARY SOCIETIES and DEBATING CLUBS give abundant opportunity for speaking before audiences.

INTERCOLLEGIATE DEBATES are open for contestants from any department of the University.

PUBLIC RECITALS are given from time to time in University hall by the class in elocution.

NOTED SPEAKERS at the Friday morning chapel exercises and on other occasions give students an opportunity to observe and determine for themselves the qualities of successful public speaking.

During the year thirty-three concerts have been given by the music department, as follows:

PROFESSIONAL CONCERTS.—Music Festival—three concerts, six organ recitals, three piano recitals, one chamber music recital, one vocal recital, one recital of music for two pianos, annual faculty concert.

STUDENT CONCERTS.—Five general recitals, two recitals by the trio class, two concerts by the University Orchestra, one concert by the University Mandolin Club, one concert by the University Glee Club, one performance of opera "The Pirates of Penzance," the annual Christmas concert, the annual commencement concert, three graduating piano recitals.

The following artists have appeared in addition to members of the faculty: Piano, Augusta Cottlow, Mary Wood Chase, Harold Henry; organ, George W. Andrews; violoncello, Anton Hekking; sopranos, Charlotte Maconda, Marie Zimmerman; contraltos, Elaine De Sellem, Mrs. Otis Huff; tenors, Edward Strong, Edward Towne; bass, Frederic Martin; the Chicago Symphony Orchestra.

IN PIANO.

VOCAL SELECTION.

VOCAL SELECTION.

VOCAL SELECTION.

IN ORGAN.

VOCAL SELECTION.

VOCAL SELECTION.

VOCAL SELECTION.

Costa-Shelley Triumphant march from "Naaman."

SPECIMEN GRADUATING PROGRAMS.

 IN VOICE.

- Carissimi*..... Vittoria Mio Core.
(Old Italian.)
- Mattel*..... Oh! Oh! Hear the Wild Wind Blow.
(Italian Boatman's Song.)
- Weber*..... Before Mine Eyes Beheld Him.
Scene and Aria from "Der Freischutz."
- Blumenthal*..... My Queen.
- Metcalf*..... Until You Came.
- Buck*..... Salve Regina.
- Hawley*..... { My Little Love.
 Where Love Doth Build His Nest.
 The Sweetest Flower That Blows.
- Wagner*..... To the Evening Star.
From "Tannhauser."
- Marschner*..... Upon That Day.
Air from "Hans Heiling."

 IN VIOLIN.

- Handel*..... Sonata in A major.
- Keler Bela*..... Hungarian Idyl.

VOCAL SELECTION.

- Mendelssohn*..... Andante and Finale of Concerto.

VOCAL SELECTION.

- Bohm*..... Cavatina.
- Pierne*..... Serenade.
- Wieniawski*..... Kujawiak Mazurka.

VOCAL SELECTION.

- Haydn*..... Trio in G major.

PROGRAM OF STUDY.

PIANOFORTE.

LEADING TO THE DEGREE OF BACHELOR OF MUSIC.

ARTISTS' COURSE—COLLEGIATE COURSE.

These courses are identical in outline, but students in the artists' course are expected to do a larger amount of work, to maintain the highest grade in all musical subjects and give a graduating recital. This is not required in the collegiate course, which is intended for those who wish to fit themselves for teachers or take music for personal culture rather than to become public performers. After the first year students are graded in the two courses according to their standing.

FRESHMAN YEAR.

First Term:

Piano 1, twice a week, by appointment. Assistants.

Technic (Piano 9), once a week, by appointment. Assistants.

Harmony (Musical Theory 1), Tuesday and Friday, at 2.

Professor Skilton.

Rhetoric 1, two hours a week. Associate Professor O'Leary, Assistant Professors Bryant, Sisson and Gray, and instructors.

Physical Education 1, once a week, by appointment. Assistant Professor Fish.

History of Music, Thursday, at 4. Professor Skilton.

Recitals and Ensemble Playing.

Second Term:

Piano 2, twice a week, by appointment. Assistants.

Technic (Piano 10), Wednesday, at 3. Assistants.

Harmony (Musical Theory 2), Tuesday and Friday, at 2.

Professor Skilton.

Rhetoric 2, three hours a week. Associate Professor O'Leary, Assistant Professors Lynn, Bryant, Sisson and Gray, and instructors.

Physical Education 2, once a week, by appointment. Assistant Professor Fish.

History of Music, Thursday, at 4. Professor Skilton.

Recitals and Ensemble Playing.

SOPHOMORE YEAR.

First Term:

Piano 3, twice a week, by appointment. Professor Preyer and assistant.

Technic (Piano 11), once a week, by appointment. Assistants.

Harmony (Musical Theory 3), Tuesday and Friday, at 3. Professor Skilton.

Physical Education 3, once a week, by appointment. Assistant Professor Fish.

English Literature I, three hours a week. Assistant Professors Bryant and Gray.

Normal Class, Wednesday, at 4. Professor Skilton.

History of Music, Thursday, at 4. Professor Skilton.

Recitals and Ensemble Playing.

One of the following optionals may be taken (private lessons subject to fees):

Vocal Culture 1, twice a week, with Italian 1, twice a week, by appointment. Professor Hubach.

Free-hand Drawing (Drawing and Painting 1), Monday, Wednesday, and Friday, 9 to 12:15, or 1:30 to 4:30. Professor Griffith.

Elocution 2, two times a week. Associate Professor Frazier.

German 1, daily, at 8, 9, 11:15, or 2:30. Associate Professor Engel and Assistant Professor Corbin.

French 1, daily, at 8, 9, 11:15, or 2:30. Assistant Professor Neuen Schwander.

Second Term:

Piano 4, twice a week, by appointment. Professor Preyer and assistant.

Technic (Piano 12), by appointment. Assistants.

Musical Analysis (Musical Theory 4), Tuesday and Friday, at 3. Professor Skilton.

Physical Education 4, once a week, by appointment. Assistant Professor Fish.

English Literature II, two hours a week. Assistant Professors Bryant and Gray.

Normal Class, Wednesday, at 4. Professor Skilton.

History of Music, Thursday, at 4. Professor Skilton.

Recitals and Ensemble Playing.

One of the following optionals may be taken (private lessons are subject to fees):

Vocal Culture 1, twice a week, with Italian 1, twice a week, by appointment. Professor Hubach.

Free-hand Drawing (Drawing and Painting 1), Monday, Wednesday, and Friday, at 9 to 12:15, or 1:30 to 4:30. Professor Griffith.

Elocution 2, two times a week. Associate Professor Frazier.

German 2, daily, at 8, 9, 11:15, or 2:30. Associate Professor Engel and Assistant Professor Corbin.

French 2, daily, at 8, 9, 11:15, or 2:30. Assistant Professor Neuen Schwander.

JUNIOR YEAR.

First Term:

Piano 5, twice a week, by appointment. Professor Preyer.

Composition (Musical Theory 7), Monday, at 3. Professor Skilton.

Counterpoint (Musical Theory 5), Thursday, at 3. Professor Preyer.

History of Music, Thursday, at 4. Professor Skilton.

English Literature 3, daily, at 11:15. Assistant Professor Gray.

Recitals and Ensemble Playing.

One of the following optionals may be taken (private lessons are subject to fees):

Vocal Culture 1 or 2, twice a week, by appointment. Professor Hubach.

Drawing and Painting 1 or 2. Professor Griffith.

Elocution 2, two times a week. Associate Professor Frazier.

German 1 or 3, daily. Associate Professor Engel and Assistant Professor Corbin.

French 1 or 3, daily. Assistant Professor Le Duc.

Education 1, daily, at 3:30. Professor Olin.

English Literature of the Nineteenth Century, three hours a week, Monday, Wednesday, and Friday, at 11:15. Professor Dunlap.

Second Term:

Piano 6, twice a week, by appointment. Professor Preyer.

History of Music, Thursday, at 4. Professor Skilton.

Composition (Musical Theory 8), Monday, at 3. Professor Skilton.

Counterpoint (Musical Theory 5), Thursday at 3. Professor Preyer.

Acoustics, by appointment. (Given in 1908-'09.)

Recitals and Ensemble Playing.

Two theses.

One of the following optionals may be taken (private lessons are subject to fees):

Vocal Culture 1 or 2, twice a week, by appointment. Professor Hubach.

Drawing and Painting 1 or 2. Professor Griffith.

German 2 or 4, daily. Associate Professor Engel and Assistant Professor Corbin.

French 2 or 4, daily. Assistant Professor Le Duc.

Education 1, daily, at 3:30. Professor Olin.

Elocution, two times a week. Associate Professor Frazier.

English Poetry of the Nineteenth Century, three hours a week, at 11:15. Professor Dunlap.

SENIOR YEAR.

First Term:

Piano 7, twice a week, by appointment. Professor Preyer.

Composition (Musical Theory 9), Wednesday, at 2:30. Professor Preyer.

Canon and Fugue (Musical Theory 11), once a week, by appointment. Professor Skilton.

Recitals and Ensemble Playing.

Two theses.

Optional, Shakspeare, three hours a week, at 10:15. Professor Dunlap.

Second Term:

Piano 8, twice a week, by appointment. Professor Preyer.

Instrumentation (Musical Theory 12), once a week, Wednesday, at 3. Professor Skilton.

Composition (Musical Theory 10), once a week. Professor Preyer.

Two theses.

Optional, Shakspeare, three hours a week, at 10:15. Associate Professor O'Leary.

GRADUATE COURSE.

Piano 13, a graduate course, is offered in pianoforte, leading to the degree of master of music (M. M.) The course is open only to graduates of the artists' course who have taken Senior composition work, and to graduates of other schools who have done a corresponding amount of work. In all cases an entrance examination will be insisted upon in both piano and musical composition. The examination will consist of the technic, studies,

concertos, etc., and the composition work required for the completion of the Senior year, outlined above; and furthermore, grade I will be required of all applicants. A pianoforte recital is required upon completion of the course, and the performance of an original composition is one of the larger forms.

ORGAN.

LEADING TO THE DEGREE OF BACHELOR OF MUSIC.

Three years' course, open to those who have completed the work of the Freshman year in piano.

SOPHOMORE YEAR.

First Term:

Organ 1, once a week, by appointment. Professor Skilton.

Piano 3, once a week, by appointment. Assistant.

Technic (Piano 11), once a week, by appointment. Assistant.

Harmony (Musical Theory 3), Tuesday and Friday, at 3.

Professor Skilton.

Physical Education 3, once a week, by appointment. Assistant Professor Fish.

English Literature 1, three hours a week. Assistant Professors Bryant and Gray.

Normal Class, Wednesday, at 4. Professor Skilton.

History of Music, Thursday, at 4. Professor Skilton.

Recitals and Ensemble Playing.

One of the following optionals may be taken (private lessons are subject to fees):

Vocal Culture 1, twice a week, with Italian 1, twice a week, by appointment. Professor Hubach.

Free-hand Drawing (Drawing and Painting 1), Monday, Wednesday, and Friday, 9 to 12:15, or 1:30 to 4:30. Professor Griffith.

Elocution 2, two times a week. Associate Professor Frazier.

German 1, daily, at 8, 9, 11:15, or 2:30. Associate Professor Engel and Assistant Professor Corbin.

French 1, daily, at 8, 9, 11:15, or 2:30. Assistant Professor Neuen Schwander.

Second Term:

Organ 2, once a week, by appointment. Professor Skilton.

Piano 4, once a week, by appointment. Assistant.

Technic (Piano 12), once a week, by appointment. Assistant.

Musical Analysis (Musical Theory 4), Tuesday and Friday, at 3. Professor Skilton.

Physical Education 4, once a week, by appointment. Assistant Professor Fish.

English Literature 2, two hours a week. Assistant Professors Bryant and Gray.

Normal Class, Wednesday, at 4. Professor Skilton.

History of Music Thursday, at 4. Professor Skilton.

Recitals and Ensemble Playing.

One of the following optionals may be taken (private lessons are subject to fees) :

Vocal Culture 1, twice a week, with Italian 1, twice a week, by appointment. Professor Hubach.

Free-hand Drawing (Drawing and Painting 1), Monday, Wednesday, and Friday, at 9 to 12:15, or 1:30 to 4:30. Professor Griffith.

Elocution 2, two times a week. Associate Professor Frazier.

JUNIOR YEAR.

First Term:

Organ 3, twice a week, by appointment. Professor Skilton.

Composition (Musical Theory 7), Monday, at 3. Professor Skilton.

Counterpoint (Musical Theory 5), Thursday, at 3. Professor Preyer.

History of Music, Thursday, at 4. Professor Skilton.

English Literature 3, daily, at 11:15. Assistant Professor Lynn.

Recitals and Ensemble Playing.

One of the following optionals may be taken (private lessons are subject to fees) :

Vocal Culture 1 or 2, by appointment. Professor Hubach.

German 1 or 3, daily. Associate Professor Engel and Assistant Professor Corbin.

French 1 or 3, daily. Assistant Professor Neuen Schwander.

Drawing and Painting 1 or 2. Professor Griffith.

Elocution, two times a week. Associate Professor Frazier.

English Literature of the Nineteenth Century, three hours a week, at 11:15. Professor Dunlap.

Second Term:

Organ 4, twice a week, by appointment. Professor Skilton.
Composition (Musical Theory 8), Monday, at 3. Professor Skilton.

Counterpoint (Musical Theory 6), Tuesday, at 3. Professor Preyer.

Acoustics, two hours a week. (Given in 1908-'09.)

History of Music, Thursday, at 4. Professor Skilton.

Normal Class, Wednesday, at 4. Professor Hubach.

Recitals and Ensemble Playing.

Two theses.

One of the following optionals may be taken (private lessons subject to fees):

Vocal Culture 1 or 2, by appointment. Professor Hubach.

Drawing and Painting 1 or 2. Professor Griffith.

Elocution, two times a week. Associate Professor Frazier.

German 2 or 4, daily. Associate Professor Engel and Assistant Professor Corbin.

French 2 or 4, daily. Assistant Professor Neuen Schwander.

English Poetry of the Nineteenth Century. Three hours a week, at 11:15. Professor Dunlap.

SENIOR YEAR.*First Term:*

Organ 5, twice a week, by appointment. Professor Skilton.

Composition (Musical Theory 9), Wednesday, at 2:30. Professor Preyer.

Canon and Fugue (Musical Theory 11), Wednesday, at 11. Professor Skilton.

Church Music 7, once a week. Professor Skilton.

Recitals and Ensemble Playing.

Optional. Shakspeare. Three hours a week, at 10:15. Professor Dunlap.

Two theses.

Second Term:

Organ 6, twice a week, by appointment. Professor Skilton.

Instrumentation (Musical Theory 12), Wednesday, at 3. Professor Skilton.

Composition (Musical Theory 10), Wednesday, at 9. Professor Preyer.

Optional. Shakspeare. Three hours a week, at 10:15. Associate Professor O'Leary.

Two theses.

VIOLIN OR VIOLONCELLO.

LEADING TO THE DEGREE OF BACHELOR OF MUSIC.

These courses are the same as the four-year course in piano, except that violin or violoncello 1 to 8 take the place of piano 1 to 8. Piano 9 to 12 is required.

VOCAL CULTURE.

LEADING TO THE DEGREE OF BACHELOR OF MUSIC.

FRESHMAN YEAR.

First Term:

Vocal Culture 1, twice a week, by appointment. Professor Hubach or Mrs. Lyons.

Harmony (Musical Theory 1), Tuesday and Friday, at 2. Professor Skilton.

Rhetoric 1, two hours a week. Associate Professor O'Leary, Assistant Professors Lynn, Bryant, Sisson and Gray.

Italian 1, twice a week, by appointment. Assistant Professor Vaughan.

Piano I, one hour a week with assistant.

Physical Education 1, once a week. Assistant Professor Fish.

History of Music, Thursday, at 4. Professor Skilton.

Recitals and Chorus Singing.

Second Term:

Vocal Culture 2, twice a week, by appointment. Professor Hubach or Mrs. Lyons.

Harmony (Musical Theory 2), Tuesday and Friday, at 2. Professor Skilton.

Rhetoric 2, three hours a week. Associate Professor O'Leary, Assistant Professors Lynn, Bryant, Sisson and Gray.

Italian 1, twice a week, by appointment. Assistant Professor Vaughan.

Piano 2, one hour a week with assistant.

Physical Education 2, once a week. Assistant Professor Fish.

History of Music, Thursday, at 4. Professor Skilton.

Recitals and Chorus Singing.

SOPHOMORE YEAR.

First Term:

Vocal Culture 3, twice a week, by appointment. Professor Hubach or Mrs. Lyons.

Harmony (Musical Theory 3), Tuesday and Friday, at 3:00. Professor Skilton.

English Literature 1, three hours a week. Assistant Professors Lynn, Bryant and Gray.

Physical Education 3, once a week. Assistant Professor Fish.

Sight-singing Class, Wednesday, at 4. Mrs. Lyons.

History of Music, Thursday, at 4. Professor Skilton.

Recitals and Chorus Singing.

Piano 3, one hour a week with assistant.

One of the following optionals may be taken (private lessons are subject to fees) :

Piano 1, twice a week. Professor Preyer.

Free-hand Drawing (Drawing and Painting 1), Monday, Wednesday, and Friday, 9 to 12:15, or 1:30 to 4:30. Professor Griffith.

Elocution 2, two times a week. Associate Professor Frazier.

German 1, daily, at 8, 9, 11:15, or 2:30. Associate Professor Engel and Assistant Professor Corbin.

French 1, daily, at 8, 9, 11:15, or 2:30. Assistant Professor Neuen Schwander.

Second Term:

Vocal Culture 4, twice a week, by appointment. Professor Hubach or Mrs. Lyons.

Musical Analysis (Musical Theory 4), Tuesday and Friday, at 3. Professor Skilton.

English Literature 2, two hours a week. Assistant Professors Lynn, Bryant and Gray.

Physical Education 4, once a week. Assistant Professor Fish.

Sight-singing Class, Wednesday, at 4. Mrs. Lyons.

History of Music, Thursday, at 4. Professor Skilton.

Recitals and Chorus Singing.

Piano 4, one hour a week, with assistant.

One of the following optionals may be taken (private lessons are subject to fees) :

Piano 1, twice a week, by appointment. Professor Preyer.

Free-hand Drawing (Drawing and Painting 1), Monday, Wednesday, and Friday, 9 to 12:15, or 1:30 to 4:30. Professor Griffith.

Elocution 4, two times a week. Associate Professor Frazier.

German 2, daily, at 8, 9, 11:15, or 2:30. Associate Professor Engel and Assistant Professor Corbin.

French 2, daily, at 8, 9, 11:15, or 2:30. Assistant Professor Neuen Schwander.

JUNIOR YEAR.

First Term:

Vocal Culture 5, twice a week, by appointment. Professor Hubach.

Composition (Musical Theory 7), Monday, at 3. Professor Skilton.

Counterpoint (Musical Theory 5), Thursday, at 3. Professor Preyer.

History of Music, Thursday, at 4. Professor Skilton.

English Literature 3, daily, at 11:15. Assistant Professor Lynn.

One of the following optionals may be taken (private lessons are subject to fees):

Piano 1 or 2, twice a week, by appointment. Professor Preyer.

Drawing and Painting 1 or 3. Professor Griffith.

Elocution, two times a week. Associate Professor Frazier.

German 1 or 3, daily. Associate Professor Engel and Assistant Professor Corbin.

French 1 or 3, daily. Assistant Professor Neuen Schwander.

English Literature of the Nineteenth Century, three hours a week, at 11:15. Professor Dunlap.

Second Term:

Vocal Culture 6, twice a week, by appointment. Professor Hubach.

Composition (Musical Theory 8), Monday, at 3. Professor Skilton.

Counterpoint (Musical Theory 6), Thursday, at 3:30. Professor Preyer.

Acoustics, two hours a week. (Given in 1908-'09.)

History of Music, Thursday, at 4. Professor Skilton.

Two theses.

One of the following optionals may be taken (private lessons are subject to fees):

Piano 1 or 2, twice a week, by appointment. Professor Preyer.

Drawing and Painting 1 or 2. Professor Griffith.

Elocution, two times a week. Associate Professor Frazier.

German 2 or 4, daily. Associate Professor Engel and Assistant Professor Corbin.

French 2 or 4, daily. Assistant Professor Neuen Schwander.

English Poetry of the Nineteenth Century, three hours a week, at 11:15. Professor Dunlap.

SENIOR YEAR.

First Term:

Vocal Culture 7, twice a week, by appointment. Professor Hubach.

Composition (Musical Theory 9), Wednesday, at 3:30. Professor Preyer.

Canon and Fugue (Musical Theory 11), Wednesday, at 11. Professor Skilton.

Two theses.

Optional, Shakspeare, three hours a week, at 10:15. Professor Dunlap.

Second Term:

Vocal Culture 8, twice a week, by appointment. Professor Hubach.

Instrumentation (Musical Theory 12), Wednesday, at 3. Professor Skilton.

Opera, once a week. Professor Hubach.

Dramatic Action, twice a week, by appointment. Associate Professor Frazier.

Two theses.

Optional, Shakspeare, three hours a week, at 10:15. Associate Professor O'Leary.

DRAWING AND PAINTING.

LEADING TO THE DEGREE OF BACHELOR OF PAINTING.

FRESHMAN YEAR.

Drawing (Drawing and Painting 1), Monday, Wednesday, and Friday, 1:30 to 4:30, throughout the year. Professor Griffith.

Painting (Drawing and Painting 6), daily, 1:30 to 4:30, 2d term. Professor Griffith.

English Literature 1 and 2, alternating with Rhetoric 1 and 2, throughout the year. Associate Professor O'Leary, Assistant Professors Lynn, Bryant, Sisson and Gray.

Composition (Drawing and Painting 9), Tuesday, at 1:30, throughout the year. Professor Griffith.

Perspective (Drawing and Painting 10), Thursday, at 1:30, throughout the year. Professor Griffith.

Physical Education 1 and 2, twice a week, throughout the year. Assistant Professor Fish.

SOPHOMORE YEAR.

Drawing (Drawing and Painting 2), 1st term and 2d term, (a), daily, 1:30 to 4:30. Professor Griffith.

Drawing (Drawing and Painting 3 and 4), Monday, Wednesday, and Friday, 1:30 to 4:30, throughout the year. Professor Griffith.

Ornamental Design (Drawing and Painting 12), Monday, at 4:30, throughout the year. Professor Griffith.

Composition (Drawing and Painting 9), Tuesday, at 1:30, throughout the year. Professor Griffith.

English Literature 3, 1st term, five hours a week, at 11:15. Assistant Professor Lynn.

One two-hour course in English Literature, 2d term.

Optional: French 1 and 2, German 1 and 2.

Two forensics, 1st and 2d terms.

JUNIOR YEAR.

Painting (Drawing and Painting 7), 1st term and 2d term, daily, 1:30 to 4:30. Professor Griffith.

Painting (Drawing and Painting 8), 2d term, daily, 1:30 to 4:30. Professor Griffith.

Ornamental Design (Drawing and Painting 13), Thursday, at 4:30, throughout the year. Professor Griffith.

Composition (Drawing and Painting 9), Tuesday, at 1:30, throughout the year. Professor Griffith.

History of Greek Art (Greek 17), 2d term, daily, at 11:15. Professor Wilcox.

English Rhetoric 5 or 7 and 6 or 8, 1st and 2d terms, two or three days a week, at 8. Associate Professor O'Leary and Assistant Professor Sisson.

Acoustics, 2d term, by appointment.

Optional: French 1 and 2, or 3 and 4; German 1 and 2, or 3 and 4. Two forensics, 2d term.

SENIOR YEAR.

Painting (Drawing and Painting 7), 1st term and 2d term, daily, 1:30 to 4:30. Professor Griffith.

Painting (Drawing and Painting 8), 2d term, daily, 1:30 to 5:30. Professor Griffith.

History of Ornament (Drawing and Painting 13), Thursday, at 4:30, throughout the year. Professor Griffith.

Composition (Drawing and Painting 9), Tuesday, at 1:30, throughout the year. Professor Griffith.

Modern Art (History of the Fine Arts 3), 2d term, Monday and Thursday, at 2:30. Professor Griffith.

Four forensics, or graduating thesis.

Graduating painting.

ELOCUTION.

TWO-YEAR COLLEGIATE COURSE.

The course in elocution covers two years of regular University work. Its purpose is to train students to become intelligent and effective readers, whether in the home or on the platform; to give the student an understanding and appreciation of the drama, both as literature and as a theatrical representation, and to fit him to teach expression in all its phases in schools and colleges. A certificate is given upon completion of the two years' course.

JUNIOR YEAR.

First Term:

Principles of Vocal Expression (Elocution 1), two hours a week, Tuesday and Thursday, at 1:30. Associate Professor Frazier.

Methods of Teaching Reading (Elocution 2), two hours a week, Tuesday and Thursday, at 9. Associate Professor Frazier.

Shakspere (Elocution 3), two hours, Tuesday and Thursday, at 2:30. Mr. ———.

Breathing and Voice Production (Elocution 4), two hours, Monday and Wednesday, at 1:30. Associate Professor Frazier and Mr. ———.

Repertoire (Elocution 9), 1 hour, Friday, at 1:30. Associate Professor Frazier and Mr. ———.

Rhetoric 1, twice a week. Associate Professor O'Leary, Assistant Professors Lynn, Bryant, Sisson and Gray.

English Literature 1, three times a week. Assistant Professors Lynn, Bryant and Gray.

One other optional course may be chosen from the College, upon consent of the instructor.

Second Term:

Addresses, Lectures and Readings (Elocution 5), three hours a week, Monday, Wednesday, and Friday, at 9. Mr. ———.
Dialects and Impersonations (Elocution 6), two hours a week, Monday and Wednesday, at 1:30. Associate Professor Frazier.

Staging of Plays (Elocution 7), two hours, Monday and Wednesday, at 1:30. Associate Professor Frazier.

Stage Department (Elocution 8), two hours, Monday and Wednesday, at 2:30. Associate Professor Frazier and Mr. ———.

Repertoire (Elocution 9), one hour, Friday, at 1:30. Associate Professor Frazier and Mr. ———.

Rhetoric 2, three times a week. Associate Professor O'Leary, Assistant Professors Lynn, Bryant, Sisson and Gray.

English Literature 2, twice a week. Assistant Professors Lynn, Bryant and Gray.

One additional optional course may be chosen from the College, upon the consent of the instructor.

SENIOR YEAR.

First Term:

Debate and Parliamentary Law (Elocution 10), two hours a week, Tuesday and Thursday, at 11:15. Mr. ———.

Advanced Vocal Culture (Elocution 11), two hours a week, Tuesday and Thursday, at 1:30. Associate Professor Frazier and Mr. ———.

Presentation of Farces (Elocution 12), two hours, Monday and Wednesday, at 1:30. Associate Professor Frazier.

Verse Forms (Elocution 13), two hours, Tuesday and Thursday, at 1:30. Mr. ———.

Repertoire (Elocution 9), one hour, Friday, at 1:30. Associate Professor Frazier and Mr. ———.

Rhetoric 5, Monday, Wednesday, and Friday, at 8. Associate Professor O'Leary and Assistant Professor Lynn.

Second Term:

Extempore Speaking and Lecturing (Elocution 14), two hours, Tuesday and Thursday, at 9. Associate Professor Frazier.

Presentation of Plays (Elocution 15), two hours, Monday and Wednesday, at 1:30. Associate Professor Frazier.

Browning and Tennyson (Elocution 16), two hours, Tuesday and Thursday, at 1:30. Mr. ———.

Repertoire (Elocution 9), one hour a week, Friday, at 1:30.

Associate Professor Frazier and Mr. ———.

Logic and Psychology, daily, at 8. Assistant Professor Hogg.

English Literature 9, Monday, Wednesday, and Friday, at 10:15. Associate Professor O'Leary.

Public Recitals (Elocution 17), two hours, Monday and Wednesday, at 2:30. Associate Professor Frazier and Mr. ———.

TWO-YEAR COLLEGIATE COURSES.

These courses (identical with the work of the first and second years of the four-year collegiate courses outlined above) are intended for those students who feel that their time is limited. They are especially designed for teachers. A certificate is given upon completion of one of these courses.

ARTISTS' COURSES

IN PIANO, VOICE, VIOLIN, VIOLONCELLO, ORGAN, OR MUSICAL COMPOSITION.

These courses are the same as the four-year collegiate courses in these subjects, requiring for graduation a graduating recital or a program of original musical compositions, or a combination of both.

For entrance and continuation in these courses the highest grade will be required in all examinations in piano, voice, organ, violin, violoncello, or composition.

NORMAL COURSE

IN PUBLIC-SCHOOL MUSIC AND SINGING AT SIGHT.

This work consists of the Freshman year of the four-year course in vocal culture, together with vocal culture 6 and 7, upon the completion of which a teacher's certificate is given.

DETAILED COURSES OF STUDY.

DRAWING AND PAINTING.

Professor GRIFFITH.

All courses except 5 are required of students of drawing and painting and are open to other students of the School of Fine Arts who are prepared for them.

1.—FREE-HAND DRAWING. Free-hand drawing in charcoal, from the cast. The method of instruction aims to teach the student to construct form in a simple and correct manner. Freshman, throughout the year, Monday, Wednesday, and Friday, 1:30 to 4:30. Professor Griffith.

2.—FREE-HAND DRAWING. Free-hand drawing in charcoal, from life. Designed to give firm construction in drawing and training in grasping the essential character of the model. Sophomore, 1st term, and 2d term, (a), Monday, Wednesday, and Friday, 1:30 to 4:30. Professor Griffith.

3.—FREE-HAND DRAWING. Free-hand drawing in pen and ink, from cast and still life. The technique of pen drawing for reproduction. Sophomore, 1st term, daily, 1:30 to 4:30. Professor Griffith.

4.—FREE-HAND DRAWING. Free-hand drawing with water-colors. Wash-drawing for reproduction by the half-tone process. Sophomore, 2d term, daily, 1:30 to 4:30. Professor Griffith.

5.—DRAWING. This course aims to meet the needs of two classes of students: Students who wish training in artistic preparation and graphic expression, for its general culture value; and technical students, to whom some drawing is essential. It consists of the first eighteen weeks' work, covered by courses 1, 3, 9, and 10, three hours daily.

6.—PAINTING. Painting with water-color, oil, or pastille, from still life. Students begin the study of color in this class. The observation and reproduction of simple masses of form and color. Freshman, 2d term; Sophomore, 1st term and 2d term; daily, 1:30 to 4:30. Professor Griffith.

7.—PAINTING. Painting with water-color, oil, or pastille, from life. Portrait painting is the object of the instruction

given in this class. Junior and Senior, 1st and 2d terms, daily, 1:30 to 4:30. Professor Griffith.

8.—PAINTING. Painting of landscape and human figures in the open air. Junior and Senior, 2d term, daily, 1:30 to 5:30. Professor Griffith.

9.—COMPOSITION. Throughout the entire course every student is required to study the pictorial compositions of the masters, and each week to make one original composition upon a given subject. Tuesday, at 1:30. Professor Griffith.

10.—PERSPECTIVE. Elementary perspective, shadows, and reflections. Freshman, 1st term, Tuesday, at 1:30. Professor Griffith.

11.—PERSPECTIVE. Advanced perspective; the application of the principles of perspective to pictorial purposes. Freshman, 2d term, Thursday, at 1:30. Professor Griffith.

12.—ORNAMENTAL DESIGN. The anatomy of pattern. Sophomore, 1st term, (a), Wednesday, 4:30 to 5:30. The planning of ornament. Sophomore, 1st term, (b), and 2d term, at 11:15. Professor Griffith.

13.—ORNAMENTAL DESIGN. The application of ornament. Junior, 1st and 2d terms, Monday, 4:30 to 5:30. The history of ornament. Senior, 1st and 2d terms, Thursday, at 11:15. Professor Griffith.

EDUCATION.

1.—THE HISTORY OF EDUCATION. A survey of both ancient and modern periods. Studies of typical movements in education, the development of national systems, and the work of great educators. 1st and 2d terms, Monday, Wednesday, and Friday, at 3:30. Professor Olin.

ELOCUTION.

Associate Professor FRAZIER.
Mr. ———.

Courses 1 to 17, inclusive, are arranged to cover two years of consecutive work in the University. The first nine courses should be taken in the first year; the remaining courses the second year. Course 18 is for special students who desire to pursue the study of elocution along lines not indicated in the regular courses.

1.—PRINCIPLES OF VOCAL EXPRESSION. Two hours, 1st term, Tuesday and Thursday, at 1:30. Purpose in utterance; types

of utterance—formulative, discriminative, emotional, and volitional. Study of grouping. Text, Chamberlain and Clark. Associate Professor Frazier.

2.—METHODS OF TEACHING READING. Two hours, 1st term, Tuesday and Thursday, at 9. The aims of this course are: (1) To present a brief review of past elocutionary methods; (2) to lay out a definite and graded method of expressional developments; and (3) to give the student opportunity to test the value of the various methods under the direction of the instructor. Associate Professor Frazier.

3.—SHAKSPERE. Two hours, 1st term, Tuesday and Thursday, at 2:30. One comedy and one tragedy will be studied. The student will be required to memorize some of the more important scenes and to impersonate the various characters. Mr. ———.

4.—BREATHING AND VOICE PRODUCTION. Two hours, 1st term, Monday and Wednesday, at 1:30. Methods of breathing—corrective exercises for overcoming faulty breathing. Breathing in its relation to voice production. Voice development. Associate Professor Frazier and Mr. ———.

5.—ADDRESSES, LECTURES AND READINGS. Three hours, 2d term, Monday, Wednesday, and Friday, at 9. Exercises for the development of ability in extempore speaking. Training in the use of the manuscript in the presentation of original compositions. Practice in formulating, outlining and preparing papers and informal talks for various occasions. Suggestions for reading articles other than one's own. Mr. ———.

6.—DIALECTS AND IMPERSONATIONS. Two hours, 2d term, Tuesday and Thursday, at 1:30. The study of the various dialects, the Irish, Scotch, German, etc. Impersonations of characters of the novel and drama, and studies in pantomimic action. Associate Professor Frazier.

7.—STAGING OF PLAYS. Two hours, 2d term, Monday and Wednesday, at 1:30. Practical training in theatrical art and etiquette. The choosing of a good play, and its fitness for stage presentation. Stage effects and how they are produced. Associate Professor Frazier.

8.—STAGE DEPARTMENT. Two hours, 2d term, Monday and Wednesday, at 2:30. Practical platform work with criticism on stage presence. (b) Voice building: Part of each lesson will be devoted to voice training. Associate Professor Frazier and Mr. ———.

9.—REPERTOIRE. One hour, throughout the course, Friday, at 1:30. This is a general class in which all students of the school come together for weekly recitals in elocution. Programs will be given by the students, followed by criticism and discussion led by the instructor in charge. Associate Professor Frazier and Mr. ———.

10.—DEBATE AND PARLIAMENTARY LAW. Two hours, 1st term. Tuesday and Thursday, at 11:15. The principles of argumentation as applied to oral debates. Weekly debates held between negative and affirmative debating teams. The study of parliamentary law and the application of these laws to the conduct of these debates.

11.—ADVANCED VOCAL CULTURE. Two hours, 1st term. Tuesday and Thursday, at 1:30. Individual and class training for compass, flexibility and purity of tone. Special attention given to individual defects in voice formation with specific exercises for their removal. Associate Professor Frazier and Mr. ———.

12.—PRESENTATION OF FARCES. Two hours, 1st term. Monday and Wednesday, at 1:30. The study and staging of well-known standard farces. Parts will be assigned to the various members of the class and performances will be given before invited audiences. Associate Professor Frazier.

13.—VERSE FORMS. Two hours, 1st term. Tuesday and Thursday, at 1:30. Verse form in its relation to oral interpretation. The study of the lyric, ballad, ode, sonnet, idyll, dramatic monologue, etc. Mr. ———.

14.—EXTEMPORE SPEAKING AND LECTURING. Two hours, 2d term, Tuesday and Thursday, at 9. Advanced course. The study of concreteness in narration and description, with special reference to public programs. Formal lectures and readings, with incidental comments. Associate Professor Frazier.

15.—PRESENTATION OF PLAYS. Two hours, 2d term, Monday and Wednesday, at 1:30. A continuation of course 12. Instead of the farce, the study of the more serious drama is undertaken. Students will participate in the plays and assist in the rehearsals of less difficult plays given by other students. Associate Professor Frazier.

16.—BROWNING AND TENNYSON. Two hours, 2d term, Tuesday and Thursday, at 1:30. The analysis and study of the poetry of Browning and Tennyson for purposes of oral interpretation. Mr. ———.

17.—PUBLIC RECITALS. Two hours, 2d term, Monday and Wednesday, at 2:30. A course preparatory for the public graduating recital required of all students who finish the work of the school. Criticism and discussion from the class and instructor in charge. Associate Professor Frazier and Mr. ———.

18.—PRIVATE CONFERENCES. The object of this course is to give students an opportunity to enroll for private work in elocution without becoming regular students in the school. Hours by appointment. Associate Professor Frazier and Mr. ———.

ENGLISH LANGUAGE AND RHETORIC.

1.—RHETORIC AND ENGLISH COMPOSITION. 1st term, two hours, Tuesday and Thursday, at 8, 9, 10:15, 11:15, 2:30, and 3:30. Written and oral themes and exercises. With outlines of rhetorical theory. Required of all Freshmen in the School of Fine Arts. Associate Professor O'Leary, Assistant Professors Lynn, Bryant, Sisson, Gray, and instructors.

2.—RHETORIC AND ENGLISH COMPOSITION. 2d term, three hours, Monday, Wednesday, and Friday, at 8, 9, 10:15, 11:15, 2:30, and 3:30. A continuation of course 1. Required of all Freshmen in the School of Fine Arts. Associate Professor O'Leary, Assistant Professors Lynn, Bryant, Sisson, Gray, and instructors.

5.—NARRATION AND DESCRIPTION. 1st term, three hours, Monday, Wednesday, and Friday, at 8 and 9. Study of general principles, with exercises. Required of all Juniors in the School of Fine Arts. Associate Professor O'Leary and Assistant Professor Lynn.

6.—NARRATION AND DESCRIPTION. 2d term, two hours, Tuesday and Thursday, at 8 and 9. A continuation of course 5. Required of all Juniors in the School of Fine Arts. Associate Professor O'Leary and Assistant Professor Lynn.

7.—EXPOSITION AND ARGUMENT. 1st term, two hours, Tuesday and Thursday, at 8. A study of general principles, with exercises and briefs. Assistant Professor Sisson.

8.—EXPOSITION AND ARGUMENT. 2d term, three hours. Monday, Wednesday, and Friday, at 8. A continuation of course 7, but open also to students who have not had course 7. Assistant Professor Sisson.

ENGLISH LITERATURE.

1.—ENGLISH LITERATURE. 1st term, three hours, Monday, Wednesday, and Friday, at 8, 9, 10:15, 11:15, 2:30, and 3:30. General history, supplemented with class study of representative authors and with required library reading. Text-books, Simonds's English Literature and Manly's English Poetry (1170-1892). Required of all Freshmen in the School of Fine Arts. Assistant Professors Lynn, Bryant, Gray, and instructor.

2.—ENGLISH LITERATURE. 2d term, two hours, Tuesday and Thursday, at 8, 9, 10:15, 11:15, 2:30, and 3:30. A continuation of course 1. Required of all Freshmen in the School of Fine Arts. Assistant Professors Lynn, Bryant, Gray, and instructor.

3.—ENGLISH LITERATURE OF THE EIGHTEENTH CENTURY. Five hours, given both terms: 1st term, daily, at 11:15 and 2:30; 2d term, daily, at 8 and 2:30. A study of the period 1660-1780. Gosse's History of Eighteenth Century Literature will be used as a text-book, supplemented by lectures, by the use of Manly's English Poetry (1170-1892) in the classroom, and by considerable library reading. One thesis to be submitted with reports on collateral library work. Required of all Sophomores in the School of Fine Arts. Associate Professor Whitcomb and Assistant Professors Lynn and Gray.

FRENCH.

1.—ELEMENTARY FRENCH I. Grammar (Fraser and Squair) and easy reading. Five hours, 1st term, daily, at 8, 9, 10:15, 11:15, or 1:30. Also given in the 2d term, five hours, daily, at 11. Drill in pronunciation and forms. Open to all students who have had three years of Latin or three years of German. Assistant Professor Neuen Schwander or Assistant Professor Schoch.

2.—ELEMENTARY FRENCH II. Five hours, 2d term, daily, at 8, 9, 10:15, 11:15, or 1:30. Also given in the first term, five hours, daily, at 9. A continuation of course 1. Reading of simple prose texts, with exercises in dictation and elementary composition. Assistant Professor Neuen Schwander or Assistant Professor Schoch.

3.—MODERN FRENCH PROSE. Three hours, both terms—1st term, Monday, Wednesday, and Friday, at 9; 2d term, Monday, Wednesday, and Friday, at 8. Translation and reading of some

works of Mérimée, George Sand, Anatole France and René Bazin. Assistant Professor Neuen Schwander.

4.—COMPOSITION. Two hours, both terms, Tuesday and Thursday, 1st term, at 9; 2d term, at 8. Written exercises intended chiefly as a grammatical review. Oral exercises. Dictation. Assistant Professor Neuen Schwander.

GERMAN.

1.—OUTLINE OF GRAMMAR. The first nineteen lessons of Carruth's Otis's Grammar, with composition exercises. Carruth's Reader, about fifty pages. 1st term, daily, at 8, 9, 10:15, 11:15, 1:30, and 2:30; 2d term, at 1:30. Associate Professor Engel, Assistant Professor Corbin, and assistants.

2.—CARRUTH'S READER, completed, ZSCHOKKE, KLEIST, HEYSE, (100 pp.), and SCHILLER'S WILHELM TELL (complete). Also special exercises on case government and auxiliary verbs and sight-reading. 2d term, daily, at 8, 9, 11:15, and 1:30; 1st term, at 2:30. Associate Professor Engel, Assistant Professor Corbin, and assistants.

3.—GERMAN PROSE. Freytag's Karl der Grosse, etc. Preceded by review of grammar. Sight-reading. 1st term, daily, at 8, 9, 10:15, 11:15, 1:30, and 3:30; 2d term, at 9. Associate Professor Engel, Assistant Professor Corbin, and assistants.

4.—SCHILLER'S WALLENSTEIN (complete). 2d term, daily, at 8, 9, 10:15, 11:15, and 3:30; 1st term, at 1:30. Associate Professor Engel, Assistant Professor Corbin, and assistants.

GREEK.

17.—HISTORY OF GREEK ART. Lectures, recitations, private reading, writing of themes. 2d term, daily, at 4:30. Professor Wilcox.

MUSICAL THEORY.

Professor SKILTON.

Professor PREYER.

The following courses are required of all students in the regular music courses, excepting 9 and 10, which are optional:

1.—HARMONY. The study of overtones, scales, intervals, triads and seventh chords and their inversions. The practical work consists of harmonizing melodies in soprano or bass and playing chord progressions at the piano. Freshman, 1st term,

Tuesday and Friday, at 2. Chadwick's Harmony used. Professor Skilton.

2.—HARMONY. The study of close and open harmony, dominant ninth and diminished seventh chords, modulations. Practical work continued. Freshman, 2d term, Tuesday and Friday, at 2. Professor Skilton.

3.—HARMONY. The study of modulation, irregular resolutions, altered chords, suspensions, passing tones, organ point, harmonization of florid melodies. Practical work continued. Sophomore, 1st term, Tuesday and Friday, at 3. Professor Skilton.

4.—MUSICAL ANALYSIS. Review of Harmony. Analysis of two- and three-part song form and song with trio; the minuet, march and waltz. Classical models with original work. Sophomore, 2d term, Tuesday and Friday, at 3. Professor Skilton.

5.—COUNTERPOINT. The different orders of single counterpoint in two, three and four parts. Junior, 1st term, Thursday, at 3. Professor Preyer.

6.—COUNTERPOINT. Double and triple counterpoint; counterpoint in the twelfth and fifteenth and in more than four parts. Modern counterpoint. Junior, 2d term, Thursday, at 3. Professor Preyer.

7.—MUSICAL COMPOSITION. The theme and variations, dance and song forms. Analysis of classical models and practical work. Junior, 1st term, Monday, at 3. Professor Skilton.

8.—MUSICAL COMPOSITION. The sonata and rondo forms; analysis of classical sonatas; original work. Junior, 2d term, Monday, at 3. Professor Skilton.

9.—MUSICAL COMPOSITION. Original work in modern forms. Open only to those who show talent for composition. Senior, 1st term, Wednesday, at 9. Professor Preyer.

10.—MUSICAL COMPOSITION. Continuation of course 9. These two courses are open only to those who show talent for composition. Senior, 2d term, Wednesday, at 3. Professor Preyer.

11.—CANON AND FUGUE. The various forms of canon and their use in composition. The fugue in two, three and four parts. Analysis of Bach fugues and original work. Senior, 1st term, Wednesday, at 2. Professor Skilton.

12.—INSTRUMENTATION. The nature and treatment of the different instruments of the orchestra. The overture, symphony,

cantata. Practical work for the University Orchestra. Senior, 2d term, Wednesday, at 2. Professor Skilton.

ORGAN.

Professor SKILTON.

1.—MANUAL AND PEDAL STUDIES. Merkel or Archer. Pedal scales and arpeggios, the principles of hymn playing. Sophomore, 1st term, one hour a week, by appointment.

2.—MANUAL AND PEDAL STUDIES. Buck's Studies in Pedal Phrasing; Schmidt's Organ Etudes; Bach's Little Preludes and Fugues; Flagler's The Organist's Treasury; and other selections. Sophomore, 2d term, one hour, by appointment.

3.—SERVICE AND SOLO PLAYING. Buck's Choir Accompaniment. Various styles of hymn playing, accompaniment of solo and chorus. Schneider's Pedal Studies, easier preludes and fugues of Bach and Mendelssohn. Modern pieces by Batiste, Lemmens, Guilmant, and others. Junior, 1st term, two hours, by appointment.

4.—SERVICE AND SOLO PLAYING. Arrangement of piano accompaniments for organ. Practice in accompanying singers. The easier sonatas of Mendelssohn, Merkel, Guilmant, and others. Junior, 2d term, two hours, by appointment.

5.—CHURCH AND CONCERT PLAYING. Practical work in playing the church service. The more difficult fugues and sonatas. Concert pieces by Widor, Guilmant, Saint-Saëns, Thiele, and others. Senior, 1st term, two hours a week, by appointment.

6.—CHURCH AND CONCERT PLAYING. Extemporization and transposition. Program making. Preparation of a recital. Senior, 2d term, two hours a week, by appointment.

7.—CHURCH MUSIC. The history of church music, examination of different schools and styles. Senior, 1st term, one hour a week.

PIANOFORTE.

Professor PREYER.
Miss GREISSINGER.
Miss COOKE.
Miss MILLER.
Miss RIGHTER.
Miss WIEDEMANN.

Courses 1 to 12, inclusive, are open only to students of the School of Fine Arts. Course 13 is open only to graduates in piano.

1 and 2.—PIANO. Hanon: *Virtuoso Pianist*. A limited number of studies from the following: Whiting, *Melodious Technical Exercises*; Hoffman, *etudes for the left hand*; Cramer-Buelow, *sixty selected etudes*; Preyer, *twenty etudes*, op. 35 (Shirmer); Bach, *two- and three-part inventions* (Litolf 1742), etc. *Sonatas* by Haydn, Mozart, Beethoven. Selections from classic and modern compositions. Freshman, throughout the year, twice a week, by appointment. Assistants.

3 and 4.—PIANO. Czerny: *Daily Exercises*. *Etudes*, selected according to the needs of the pupil, from Clementi's *Preludes and Exercises*; Jensen, op. 32; MacDowell, op. 39; Haberbier, *Etudes Poesies*, op. 53; Bach, *English Suites*. *Concertos* by Mozart, Hummel, etc. Selections from classic and modern compositions. Sophomore, throughout the year, twice a week, by appointment. Assistants.

5 and 6.—Philipp: *Daily Exercises*. Clementi's *Gradus ad Parnassum*; *Etudes* from Moscheles, op. 70; Seeling, *Concert Etudes*, op. 10; Chopin, *Preludes*; Bach, *Well-tempered Clavichord* (Reinecke, B. and H.); *concertos* by Beethoven, Mendelssohn, etc.; *concert pieces* by classic and modern composers. Junior, throughout the year, private lessons, twice a week, by appointment. Professor Preyer.

7 and 8.—Joseffy: *School of Advanced Piano Playing*. Philipp, *etudes for the left hand*; *etudes* from Chopin, op. 10 and op. 25; Rubinstein, op. 23, etc. *Sonatas* and *concertos* by Beethoven, Weber, Grieg, etc. *Concert pieces* by modern composers. Senior, throughout the year, private lessons, twice a week, by appointment. Professor Preyer.

9 to 12.—A course for the study of pianoforte methods, aiming to develop independence of the fingers, and acquiring correct habits of practicing the scales, arpeggios, trills, octaves, chords, etc. Freshman and sophomore, throughout the year. Wednesday 3:30 to 4:30. Miss Greissinger.

GRADUATE COURSE.

13.—Philipp (continued). Modern *etudes*, by Liszt, MacDowell, etc.; selections from Lebert & Stark, *Pianoforte School*, book IV. *Transcriptions of Bach's organ fugues*, by Liszt, Tausig, D'Albert, etc. Modern *concert pieces* and *concertos*. Twice a week throughout the year. Professor Preyer.

PHILOSOPHY.

1.—ELEMENTS OF PSYCHOLOGY. A part of the term, approximately one-third, is devoted to an exposition of the mental processes of deductive logic. Hyslop's *Logic and Argument* is used as a basis for this work. The remainder of the course is devoted to the study of the mental processes in general, and James's *Psychology*, Briefer Course, serves as a text. 1st and 2d terms, three hours, Monday, Wednesday, and Friday, at 9. Professor Boodin and Assistant Professor Hogg.

PHYSICAL EDUCATION.

1.—MARCHING. Elementary work in free-hand, dumb-bells, wands, and clubs; hygienic work on the apparatus; gymnastic games for recreation. 1st term. Assistant Professor Fish.

2.—ADVANCED WORK IN FREE-HAND. Calisthenics, and hygienic work on the apparatus; athletics of an all-around nature; games for skill and physical judgment. 2d term. Assistant Professor Fish.

3.—EDUCATIONAL WORK WITH LIGHT AND HEAVY APPARATUS. Fancy marching; games requiring skill and self-control; squad leading in calisthenics and apparatus work. 1st term. Assistant Professor Fish.

4.—SPECIALIZING IN SOME LINE OF EXERCISE. Fencing and broadsword; conducting games, competitions, and exhibitions. 2d term. Assistant Professor Fish.

PHYSICS.

6.—ELEMENTARY ACOUSTICS. A course of about twenty lectures, with demonstrations, upon the scientific basis of harmony. Required of students of the School of Fine Arts. Second term, by appointment. This course was given in the spring of 1907, and will be given in alternate years. Professor ———.

VIOLIN.

Miss PHIPPS.

Courses 1 to 4, inclusive, are required of all violin students.

1.—SCHRADIECK'S FINGER TECHNIC; Hermann's *Violin School*, book I; Hermann's *School of Scales*, book I; Kayser's *Thirty-six Etudes*, books II and III; violin duets by Dancla, Mazas, Viotti; selections from the simpler compositions of Hermann, Singelee, Alard, De Beriot, Dancla, Papini, Leonard, and Daube. By appointment.

2.—HERMANN'S VIOLIN SCHOOL, BOOK II; Scales and Technic, by Bendix and Schradieck; Hermann's School of Scales, book II; Kreutzer's Forty Studies; sonatas selected from Mozart and Handel; violin duets by Mazas; concertos from the early Italian masters; selections from the compositions of David, De Beriot, Viotti, Rode, Kreutzer, Sauret, Papina, Handel, and Bazzini. Ensemble playing. By appointment.

3.—SCALES AND TECHNIC BY BENDIX (continued); Hermann's School of Scales, book III; Fiorillo's Thirty-six Etudes; concertos by De Beriot, Spohr, and Mozart. Selections from the compositions of Sauret, David, Wieniawski, Hauser, Vieuxtemps, Bazzini, and Bohm; sonatas for violin and piano, selected from Beethoven, Grieg, and Tartini. Ensemble playing. By appointment.

4.—SCALES AND TECHNIC BY SCHRADIECK; Hermann's School of Scales, book III; Rode's Thirty-six Caprices; Dancla's Twenty Etudes; concertos by Spohr, Mendelssohn, Beethoven, and Bruch; sonatas selected from J. S. Bach; compositions by Sarasate, Hubay, Raff, Vieuxtemps, Wieniawski, Sauret, Ernst, Brahms, and Ries; violin duets by Spohr. By appointment.

VIOLONCELLO.

1 and 2.—METHOD BY S. LEE, op. 30; Battanchon, op. 7, suite I, book I; S. Lee, op. 31, book I. Selections by Kummer and Golterman. Freshman, 1st and 2d terms, two hours a week.

3 and 4.—GRUTZMACHER, op. 65; Battanchon, op. 7, suite I, book I; S. Lee, op. 31, book II; Kummer, op. 35. Selections by Golterman, Popper, and others. Sophomore, 1st and 2d terms, two hours a week.

5 and 6.—STUDIES BY GRUTZMACHER. S. Lee, op. 8; Herk, op. 20; Dotzauer. Selections by Popper, Romberg, and others. Junior, 1st and 2d terms, two hours a week, by appointment.

7 and 8.—HERK, op. 20. Dotzauer, Franschomme, Dupor. Concertos by Golterman, Romberg, and others. Sonatas by Beethoven, Mendelssohn, Rubinstein, and Grieg. Senior, 1st and 2d terms, two hours a week.

VOCAL CULTURE.

Professor HUBACH.

Mrs. LYONS.

Miss FLINTOM.

Courses 1 to 5, inclusive, are required of all students taking the four years' work in vocal culture; courses 1, 2, 3 and 5 are open to all other musical students. Course 5 is required of all Sophomores. Course 8 is required of all students wishing to graduate as teachers.

1.—TONE-PLACING. Dictation exercises for the special needs of the individual voice. Sustained tones. Breath control and the true legato. The study of conditions necessary for the poisoning of the voice. The Italian vowels. Technical exercises selected from Vannini, Lamperti, Sieber, Abt, Panofka, Garcia, and Shakspeare. Simple English and Italian songs. Freshman, twice a week throughout the year, by appointment.

2.—VOICE EXTENSION. Development of tone. Breath control. Exercises for flexibility from Lamperti, Nava, Concone, Vannini, Bordogni, Sieber, and Shakspeare. English and Italian ballads. German lieder. Church solos. Sophomore, twice a week throughout the year, by appointment.

3.—STUDY OF TONE COLOR. Exercises for flexibility, continued. Embellishments. Exercises from Concone, Panofka, Marchesi, Garcia, Panseron, and Rossini. German lieder, English oratorio, and church solos. Junior, twice a week throughout the year, by appointment.

4.—METHODS OF TONE-PLACING AND BREATHING. A comparative study. Exercises for bravura singing from Lamperti. Flexibility and finishing exercises from the masterpieces of vocalization. Stage deportment. Selections from Italian opera and English oratorio. Senior, twice a week throughout the year, by appointment. Professor Hubach.

5.—SIGHT-SINGING. Sound relationship. Time relationship. Rhythm. Dictation exercises. Unison, two part, three part, and four part. Professor Hubach.

6.—OPERA. Solo and chorus drill in the standard operas. Those taking this course are united with other singers from the University and city to form the school of grand opera. One presentation of opera will be given each year.

7.—ORATORIO. Solo and chorus drill in the standard works. Singers from the University and city are united to form the Fes-

tival Chorus. Presentation of oratorios will be given each year. This society annually engages a standard orchestra and eminent soloists for the spring festival.

8.—TEACHERS' COURSE. For students desiring to prepare themselves especially for teaching. Text: Manual Garcia. Professor Hubach.

V. THE SCHOOL OF LAW.

FACULTY.

FRANK STRONG, Ph. D., President.

JAMES W. GREEN, A. M., Dean. Professor of Law.

WILLIAM L. BURDICK, Ph. D., LL. B., Professor of Law.

WILLIAM E. HIGGINS, B. S., LL. B., Professor of Law.

WILLIAM U. MOORE, A. M., LL. B., Associate Professor of Law.

Lecturers for 1908-'09.

JOHN C. POLLOCK, Judge of the United States District Court,
Topeka.

J. G. SLONECKER, United States Referee in Bankruptcy, Topeka.

R. F. THOMPSON, ex-Judge of the District Court, Minneapolis.

JOHN D. MILLIKEN, attorney at law, McPherson, "The Fourteenth Amendment to the Constitution of the United States."

THOMAS A. NOFTZGER, State Senator, Anthony.

EDWIN P. GATES, ex-Judge of the Circuit Court, Kansas City, Mo., "Historical Development of the Code."

CLARENCE S. PALMER, attorney at law, Kansas City, Mo., "Municipal Charters."

EDWARD L. SCARRITT, ex-Judge of the Circuit Court, Kansas City, Mo.

SELDEN P. SPENCER, ex-Judge of the Circuit Court, St. Louis, Mo., "Ethics of the Legal Profession."

JOHN H. ADAMS, St. Louis, Mo., "Practical Fire Insurance."

ROBERT E. BALL, attorney at law, Kansas City, Mo.

PURPOSE OF THE SCHOOL.

It is the aim of the School of Law to give all its students a thorough acquaintance with the general principles of American law and to furnish a course of legal instruction that shall fit them to practice at the bar of any state of the Union, and to give those who do not expect to become practicing attorneys, but who desire to pursue certain legal subjects for their bearing upon business, such instruction as may be best suited to their needs.

DEGREE GRANTED.

The course of study of the School of Law leads to the degree of bachelor of laws (LL. B.).

SYSTEM OF INSTRUCTION.

It is believed to be proved by experience that, to be thoroughly efficient, instructional training in law courses must be given by resident teachers who give their whole time to instruction. The work of the School of Law is under the direction of four resident instructors, supplemented by lectures on special topics by competent men in the actual practice of law.

METHOD OF TEACHING.

There are in general three methods of class instruction in law—by lectures, by text-books, and by cases. The School of Law at the University does not pursue any method to the entire exclusion of the others. It uses the text-book method very largely for the beginning classes, and makes use of the lecture and case methods more largely as classes advance in the course. Experience seems to have shown, however, that the students get a clearer and more lasting knowledge of the fundamental principles of law through the study of a text-book and recitations in the classroom, together with a parallel study of cases to illustrate the principles involved.

The student is given large opportunity for free discussion of the topics in question, and is brought as much as possible into personal touch with his instructor.

WORK IN PREPARATION FOR LAW.

All persons proposing to enter upon the study of law are earnestly recommended to take first either a regular or special course in the College. A good fundamental education is neces-

sary to a successful study of law. Especially is it necessary now when the practitioner must come into competition with men who have had a thorough university training before they entered upon a study of law.

The College offers special work in subjects of great value as preparatory to law, in English and American constitutional and political history, constitutional law, political science, economics, sociology, history of international and common law, in rhetoric and English composition, and debating. These courses are especially recommended in preparation for law.

REQUIREMENTS FOR ADMISSION.

There are two ways of admission to the School of Law of the University: First, by certificate; second, by examination.

BY CERTIFICATE. Nearly all students enter the School of Law by certificate from high schools, academies, or other preparatory schools. The method of accrediting by certificate is the same as that in the College.

BY EXAMINATION. Candidates for admission to the Junior class of the School of Law who cannot bring certificates are required to be examined in the subjects named above. The time and place of examination are the same as in the College. (See pages 80 and 81.)

SUBJECTS FOR ADMISSION.

The subjects for which entrance work may be offered, together with the number of units, are arranged in six groups, as follows, of which a total of fifteen units must be offered:

GROUP I, English.	{ English, four units.	{ Three units are required.
GROUP II, Mathematics.	{ Algebra, one and one-half units. Plane geometry, one unit. Solid geometry, one-half unit. Plane trigonometry, one-half unit. Advanced algebra, one-half unit.	{ The algebra, one and one-half units, and plane geometry, one unit, are required.
GROUP III, Foreign Languages.	{ Latin, four units. Greek, three units. German, three units. French, three units.	{ Of these, three units are required, which must be, first, in Latin, or, second, in German.

GROUP IV, Physical Sciences.	{ Physical geography, one unit. Physics, one unit. Chemistry, one unit.	{ One unit is re- quired.
GROUP V, Biological Sciences.	{ Botany, one unit. Zoölogy, one unit. Physiology, one unit.	{ Optional.
GROUP VI, History.	{ Grek and Roman, one unit. Mediæval and modern one unit. English, one unit. American, one unit. Economics, one unit.	{ Two units are re- quired.

As observed above, to secure unconditional admission to the Junior class of the School of Law, the candidate must offer fifteen units from the foregoing list of accredited preparatory subjects. Eleven and one-half units are required, as indicated; the other three and one-half units may be chosen at will from the groups.

In view of the difficulty some preparatory schools may have in expanding their courses of study so as to include all the prescribed units, until further notice candidates will be admitted unconditionally who offer fifteen units from the foregoing list, although some of the prescribed units may not have been completed. Such postponement of the completion of preparatory requirements is possible only in those subjects in which elementary courses are offered in the College. They include all the subjects in the list of preparatory studies except three units of English, two units of Latin, two and one-half units of mathematics, physical geography, and American history.

LENGTH OF LAW COURSE.

The completed course includes three years, each of which occupies eight and one-half months (excluding two weeks' recess at Christmas). The first term of the year 1908-'09 will begin on Wednesday, the 16th day of September, 1908.

COLLEGE AND SCHOOL OF LAW IN SIX YEARS.

A regular course in the College, however, is strongly recommended. During the Senior year of the College the student may elect one-half year's work from the course in the School of Law. By this arrangement, the student, by reasonable extra work, may finish both the College and the School of Law in six years.

COURSES OF LAW IN THE SUMMER SESSION.

Attention is called to the opportunity of shortening the law course, or of correcting irregularities therein, by taking such law subjects as are offered in the Summer Session of the University.

A course has been arranged which will enable a person who enrolls in a Summer Session to graduate after attending two regular sessions of the University, provided he has previously completed the preparatory work required for entrance to the Law School, as laid down in this catalogue. For such course the student is referred to the outline of course of study in the Summer and Regular Sessions.

ADMISSION TO ADVANCED STANDING.

Persons who have previously completed a part of the course are admitted to advanced standing in the Junior and Middle classes on satisfying the Faculty as to their qualifications. No one will be so admitted to the Senior class except upon passing a satisfactory examination upon the requirements for admission, and also upon the work prescribed for the Junior and Middle classes.

Certificates of work done in other law schools of recognized standing and equivalent requirements may be received in lieu of examinations for advanced standing.

SPECIAL STUDENTS.

Opportunity is given in the School of Law for the admission of persons of mature years, who desire to pursue special work without following any prescribed course or becoming candidates for a degree.

The admission of such special students is directly under the control of the Dean of the School, whose certificate of acceptance must be presented to the Registrar before registration. Applicants for standing as special students must present satisfactory evidence of proper preparation for the studies desired, and must also meet other requirements as fixed by the Faculty.

Special students are subject to the same regulations as regular students with regard to the quality of work performed and attendance at recitations and examinations.

EXAMINATIONS.

The members of each class will be examined upon each topic when completed. A final examination will be held at the end of the third year, embracing all the studies of the course. The degree of bachelor of laws will be conferred upon members of the Senior class who complete the course of study according to the requirements.

THESIS.

Each member of the Senior class who is a candidate for a degree is required to prepare and to deposit with the Faculty, at least one month before graduation, a thesis upon some legal topic selected by himself and approved by the Faculty, which thesis shall not be less than forty folios in length. The production must be satisfactory in matter, form, and style, and the student presenting it must hold himself in readiness to be examined upon the subject.

CERTIFICATE OF ATTENDANCE.

If the student does not graduate, he may, on application to the Registrar, receive an official certificate of his attendance and of the work accomplished by him in the school.

ADMISSION TO THE BAR.

The legislature of 1903 amended the statute regulating admission to the bar, and provided for state examinations by a commission appointed by the supreme court. The board of examiners meets at Topeka on the third Monday in January and June. Applications for examination and proof of qualifications must be filed with the secretary of the board at least three weeks before the examination. Printed forms of application may be obtained from A. C. Mitchell, the secretary of the board, at Lawrence.

All applicants must present high-school certificates or affidavits from teachers showing the completion of the following subjects, or pass examinations therein, to wit: three years English—grammar, rhetoric, and literature; arithmetic, algebra, geometry; general history, Roman, English and American history; civil government; the elements of physics, physical geography, botany, biology; political economy and sociology.

All candidates for admission are required to pass a written examination covering their legal qualifications. All subjects in-

cluded in this examination are within the course of study of the University School of Law.

PRACTICE COURTS.

There are three practice courts in the School of Law, all of them under the immediate supervision of the member of the Faculty who devotes the major part of his time to this work. The sessions are held in the court-room, which has been fitted with all of the furniture to be found in court-rooms in actual practice. Ample accommodations are furnished for judge, jury, and practitioners.

THE JUNIOR PRACTICE COURT.

In the Junior year preliminary instruction is first given in the analysis of opinions, and in the preparation of cases for argument. Following this preliminary instruction, court is held under the direction of the member of the Faculty in charge. The places of attorneys, clerk, and other court officers are filled in rotation by members of the class. Cases involving statements of fact are assigned. Written briefs are required to be prepared, served upon the opposing attorneys, and submitted to a court composed of two members of the class and the member of the Faculty. Written opinions containing a full discussion of the legal questions presented are required to be handed down by the student justices.

THE MIDDLE PRACTICE COURT.

The aim of the course of the Middle year is to instruct in the preparation of cases before and after they are filed in court. To this end, statements of fact are given to the members of the class, in accordance with which trial briefs of the law and of the facts are made, and pleadings under the common law, equity and code systems of civil procedure are drawn. Each member of the class receives from the instructor in charge criticism of the work done. The code practice of the court follows closely the practice in the district courts of Kansas. Besides this work, a course of lectures is given on instructions to juries and findings of fact. Members of the class are required to draw journal entries, instructions and findings, under direction of the instructor in charge of the course.

THE SENIOR PRACTICE COURT.

The work of this year is a continuation of the work of the former two years. The student is taught how to begin and

prosecute a case in court. The former difficulty of originating facts in practice courts has been overcome, and all the testimony of complicated cases is placed in the hands of witnesses, who are interviewed by the attorneys assigned. The cases are then begun, prosecuted and determined as in actual practice. Juries are drawn and impaneled, the evidence produced, instructions given, verdicts and judgments rendered as in the courts of Kansas. Following this, appeals and petitions in error are prosecuted in due course to the supreme court, where briefs are filed and arguments made as in the supreme court of Kansas.

Only four attorneys are assigned to each case, and there are enough cases for all members of the class to act as trial attorneys and as attorneys in the appellate court. Every member of the Senior class is thus given an opportunity to conduct a case as in actual practice.

Instruction is also given in legal ethics and in office practice.

For members of the courts, a series of lectures on practical topics is arranged for the second term of each year. The following lectures were given during the first half of the second term of 1907-'08:

"Court Papers and Court Files," Hon. Henry H. Asher, clerk of the Douglas county district court.

"Practical Hints to Young Practitioners," Hon. W. C. Michaels, Kansas City, Mo.

"A Court without Lawyers," Dr. W. H. Carruth, University of Kansas.

EXPENSES.

Each resident student entering the Law School for the first time is required by law to pay a matriculation fee of five dollars. Each Kansas student, in whatever year of the law course he may be, is required by law to pay an incidental fee of twenty-five dollars at time of registration. Non-residents of Kansas pay a matriculation fee of ten dollars and an incidental fee of thirty-five dollars. Students of the School of Law may divide the payment of the incidental fee between the two terms of the school year. A diploma fee of five dollars is required at graduation.

Many students reduce their living expenses by doing light housekeeping. Board, room, light and fuel cost from three to five dollars per week. Further information about expenses may be found in connection with the College, in this catalogue.

STUDENT ORGANIZATIONS.

JURISPRUDENCE CONFERENCES. Under the direction of Prof. W. U. Moore, the School of Law has been conducting a system of conferences in jurisprudence, the purpose being to acquaint the student with the relationship existing between the law and other educational subjects. Men noted in scientific and literary branches frequently address these conferences. This method of conducting the work of instruction in law at the University, in addition to the moot-court system in practice, is a distinctive feature of the work as compared with other schools offering work in law.

COOLEY CLUB. Meetings of the club occur once each week. Any student of the School of Law is eligible, but the membership is confined at present mainly to the members of the Junior and Middle classes. Legal questions are debated, and to this is added the work of the ordinary literary debating society.

KENT CLUB. The members of the Kent club are, in the main, members of the Senior class, although any student in the School of Law is eligible to membership. The work consists of the discussion of legal, economic and historical questions, and the consideration of legal literature. Debating is a prominent feature of the work of the club.

THE KANSAS LAWYER.

This is a monthly publication edited by the students of the School of Law. It is devoted to legal literature and to items of interest to the students and alumni of the school.

HONORS AND PRIZES.

By resolution, the State Bar Association of Kansas, as a recognition of the School of Law and for the purpose of encouraging its students to work along the line of legal literature, assigns a place on the literary program of the annual meeting at Topeka to that student of the Senior class who prepares the best paper on some legal topic assigned by the Law Faculty. The merits of the papers submitted are passed upon by a committee appointed for the purpose. Eugene W. Grant was given the honor in 1907-'08.

The Edward Thompson Company offers annually a prize of a set of the American and English Encyclopedia of Law for the best thesis on a subject assigned by the Law Faculty. The contest is open to all members of the School of Law. Walter McVey won this prize in 1907-'08.

DEBATING.

Interstate debates are held each year with Oklahoma, Missouri and Colorado state universities. Members of the Law School are admitted to the preliminary contests held for the purpose of choosing representatives on each of these debates. Those chosen receive practical instruction in public speaking and debating from a committee of the general Faculty of the University. Law students are also eligible to membership in the general literary clubs of the University.

EQUIPMENT.

GREEN HALL. A building for the School of Law of the University was completed during the summer of 1905. The building cost \$65,000, and is one of the most complete and best-equipped law buildings in the West. It has three floors, devoted to recitation-rooms, offices, library, and rooms for the Law School clubs. The library contains space for about 20,000 volumes, and private study-rooms for students and Faculty open into the reading-room of the library. A large room is set aside for a practice court and the best facilities possible are available for students of the law.

LIBRARIES. The law library is composed of 4353 volumes, for the exclusive use of the students of the School of Law. The library has an excellent equipment of the best law text-books, and new texts are being added constantly. It has also reports of the courts of last resort, both state and federal, as well as Lawyers' Reports Annotated, American Decisions, American Reports, the complete *Reporter* system, and the full reprint of the English cases. Limited space has prevented as rapid growth of the library as desired, and in the new building large additions will be made to the library equipment. In addition to the volumes devoted exclusively to law, the University library of nearly 60,000 volumes is at the disposal of the law students. They thus have at hand the largest and best-selected scholarly library in the Southwest. The city library, housed in the Carnegie building, is also open to the students of the School of Law for books of fiction and general literature.

STATE LIBRARY. The state library, at Topeka, which is largely a law library, is easily accessible to students upon necessary occasions. Such works as may be found usually in large state libraries will therefore be at the disposal of the members of the Law School at various times during the year.

PROGRAM OF STUDY.

JUNIOR YEAR.

First Term (first half) :

Elements of American Jurisprudence, Robinson. Daily, at 10:15. Associate Professor Moore.

Contracts, Clark. Daily, at 11:15. Professor Green.

Practice Court. Fridays, at 1:30. Professor Higgins.

First Term (second half) :

Agency, Huffcut. Daily, at 9. Associate Professor Moore.

Contracts, Clark. Daily, at 11:15. (Continuation of the work of first half-term.) Professor Green.

Practice Court. Fridays, at 1:30. Professor Higgins.

Second Term (first half) :

Bailments, Goddard. Daily, at 9. Associate Professor Moore.

Torts, Bigelow. Daily, at 10:15. Professor Burdick.

Sales, Burdick, and cases. Daily, at 11:15. Professor Burdick.

Practice Court. Fridays, at 1:30. Professor Higgins.

Second Term (second half) :

Damages, Sedgwick. Daily, at 9. Associate Professor Moore.

Domestic Relations, Schouler, and lectures. Daily, at 11:15. Professor Burdick.

Practice Court. Fridays, at 1:30. Professor Higgins.

MIDDLE YEAR.

First Term (first half) :

Common Law Pleading, Stephen. Daily, at 9. Professor Higgins.

Bills and Notes, Huffcut. Daily, at 11:15. Associate Professor Moore.

Practice Court. Mondays and Wednesdays, at 1:30. Professor Higgins.

First Term (second half) :

Equity Pleading, Story. Daily, at 9. Professor Higgins.

Equity, Bispham. Daily, at 10:15. Professor Burdick.

Practice Court. Mondays and Wednesdays, at 1:30. Professor Higgins.

Second Term (first half) :

Code Pleading, Phillips. Daily, at 8. Professor Higgins.

Insurance, Richards. Daily, at 10:15. Associate Professor Moore.

Practice Court. Mondays and Wednesdays, at 1:30. Professor Higgins.

Second Term (second half) :

Criminal Law, Hochheimer. Daily, at 9. Professor Burdick.

Evidence, Chase's Stephen's Digest. Daily, at 10:15. Professor Green.

Practice Court. Mondays and Wednesdays, at 1:30. Professor Higgins.

SENIOR YEAR.

First Term (first half) :

Real Property, Tiedeman. Daily, at 9. Professor Burdick.

Evidence, Chase's Stephen's Digest. Daily, at 10:15. Professor Green.

Roman Law, Lectures, Sohm's Institutes. Daily, at 11:15. Professor Burdick.

Practice Court. Tuesdays and Thursdays, at 1:30. Professor Higgins.

First Term (second half) :

Corporations, Clark. Daily, at 9. Professor Green.

International Law, Lawrence. Daily, at 10:15. Associate Professor Moore.

Real Property, Tiedeman. Daily, at 11:15. (Continuation of the work of the first half-term.) Professor Burdick.

Practice Court. Tuesdays and Thursdays, at 1:30. Professor Higgins.

Second Term (first half) :

Constitutional Law, Black. Daily, at 9. Professor Green.

Corporations, Clark. Daily, at 11:15, for four weeks. Professor Green.

Municipal Corporations, ———. Daily, at 11:15, for five weeks. Professor Green.

Practice Court. Tuesdays and Thursdays, at 1:30. Professor Higgins.

Second Term (second half) :

Wills and Administrations, Underhill, first volume. Daily, at 9. Professor Higgins.

Partnership, ———. Daily, at 10:15. Associate Professor Moore.

- Constitutional Law, Black. Daily, at 11:15, for four weeks. Professor Green.
- Conflict of Laws, Minor. Daily, at 11:15, for five weeks. Professor Green.
- Practice Court. Tuesdays and Thursdays, at 1:30. Professor Higgins.

OUTLINE PROGRAM OF STUDY.

In the Summer and Regular Sessions.

SUMMER SESSION OF 1908.—Criminal Law and Torts. Agency and Bills and Notes.

REGULAR SESSION OF 1908-'09.—Common Law Pleading, Elements of American Jurisprudence, Contracts, Equity, Equity Pleading, Bailments, Insurance, Sales, Damages, Evidence, and Domestic Relations.

SUMMER SESSION OF 1909.—Agency and Bills and Notes. Criminal Law and Torts.

REGULAR SESSION OF 1909-'10.—Real Property, Evidence, Roman Law, Corporations, International Law, Code Pleading, Constitutional Law, Municipal Corporations, Wills, Partnership, and Conflict of Laws.

See, also, courses of law under the Summer Session.

COURSES OF STUDY OPEN TO GRADUATE STUDENTS.

COMMON LAW PLEADING. Two and one-half hours' credit. Daily, first half of first term, at 9. An analytical and historical study of the law of remedies at common law, including ancient modes of trial; special topics assigned, such as assumpsit, trover, trespass, for historical investigation of the development of the law of contracts and of torts. Professor Higgins.

ELEMENTARY LAW AND JURISPRUDENCE. Two and one-half hours' credit. Daily, first half of first term, at 10:15. An analytical study of the elements of jurisprudence, viz.: the science of human relations regulated by positive law; the theories of the state, sovereignty and government; an historical examination of the systems of English and American common law and equity. Selected readings. Special topics and weekly conferences. Associate Professor Moore.

ROMAN LAW. Two and one-half hours' credit. Daily, first half of first term, at 11:15. Development and extension of Roman law; its revival and present influence; the *corpus juris civilis*; the law of persons, of the family, of property, of serv-

itudes of obligations, of delicts, of inheritance, of procedure, of criminal law, etc. Professor Burdick.

CONTRACTS. Five hours' credit. Daily, entire first term, at 11:15. Mutual assent and its communication; offers and their expiration or revocation; consideration; requisites of contracts under seal; statute of frauds; rights of beneficiaries and assignees; kinds of contracts; illegality, impossibility, and duress, etc.; discharge of contracts. Professor Green.

INTERNATIONAL LAW. Two and one-half hours' credit. Daily, second half of first term, at 10:15. International law viewed as part of the common law of England and the United States. International relations in time of peace: states, territorial rights, territorial jurisdiction, jurisdiction on the high seas, nationality. International relations as modified by war: measures short of war, effect of war as between enemies, neutrality. Associate Professor Moore.

BAILMENTS. Two and one-half hours' credit. Daily, first half of second term, at 9. The legal relation of the parties to the bailment contract. Liens; the law of pledge, of inkeepers, of common carriers of property, passengers and intelligence. Associate Professor Moore.

INSURANCE. Two and one-half hours' credit. Daily, first half of second term, at 10:15. The theory of insurance with reference to fire, marine, accident, and life risks; the legal relation of the parties to the insurance contract examined historically and analytically with a view to developing the fundamental principles of contracts and the law merchant underlying it; interpretation and construction of the standard policies. Open only to students who have had contracts. Associate Professor Moore.

CONSTITUTIONAL LAW. Five hours' credit. Daily, second term, first half, at 9, second half at 11:15. General principles governing constitutions; the United States and the states; establishment and amendment of constitutions; construction and interpretation; departmental powers; police power; eminent domain; taxation; civil rights; constitutional guaranties; laws impairing the obligation of contracts; retroactive laws. Professor Green.

TORTS. Two and one-half hours' credit. Daily, first half of second term, at 10:15. The theory and nature of a tort; essential elements of; harms not amounting to torts; parties, husband and wife, infants, corporations, torts by servants; specific torts,

assault and battery, false imprisonment, malicious prosecution, etc.; discharge of torts; remedies for torts. Professor Burdick.

DOMESTIC RELATIONS OR FAMILY LAW. Two and one-half hours' credit. Daily, second half of second term, at 11:15. Husband and wife: Marriage, property rights, separation and divorce. Parent and child: Mutual rights and duties. Guardian and ward: Common law, chancery and statutory guardians; procedure in connection with guardians. Infants: Contracts, torts and crimes. Master and servant: Their mutual rights and duties. Professor Burdick.

CORPORATIONS. Five hours' credit. Daily, second half of first term, at 9, and first half of second term, at 11:15. The nature and classification of corporations; the promotion, creation, dissolution and succession thereof; their powers and liabilities; rights and liabilities of members; *ultra vires* acts; legislative control; taxation, management, etc. Professor Green.

VI. THE SCHOOL OF PHARMACY.

FACULTY.

FRANK STRONG, Ph. D., President.

LUCIUS E. SAYRE, Ph. M., Dean. Professor of Pharmacy and
Materia Medica.

EPHRAIM MILLER, Ph. D., Professor of Mathematics.

EDGAR H. S. BAILEY, Ph. D., Professor of Chemistry.

ERASMUS HAWORTH, Ph. D., Professor of Mineralogy.

WILLIAM C. STEVENS, M. S., Professor of Botany.

HENRY B. NEWSON, Ph. D., Professor of Mathematics.

IDA H. HYDE, Ph. D., Professor of Physiology.

ROBERT K. DUNCAN, A. B., Professor of Industrial Chemistry.

WILLIAM E. HIGGINS, LL. B., Professor of Law.

RAPHAEL D. O'LEARY, A. B., Associate Professor of English.

ELMER F. ENGEL, A. M., Associate Professor of German.

MARTIN E. RICE, M. S., Associate Professor of Physics.

JOHN N. VAN DER VRIES, Ph. D., Associate Professor of Mathe-
matics.

RALPH E. BASSETT, A. M., Associate Professor of French.

FREDERICK H. BILLINGS, Ph. D., Associate Professor of Botany
and Bacteriology.

HERBERT W. EMERSON, B. S. (Secretary), Assistant Professor of
Pharmacy.

MARGARET LYNN, A. M., Assistant Professor of English.

CHARLES H. ASHTON, A. M., Assistant Professor of Mathematics.

DAVID F. MCFARLAND, M. S., Assistant Professor of Chemistry.

ALMA LE DUC, Ph. B., Assistant Professor of French.

CHARLES M. STERLING, A. B., Assistant Professor of Pharma-
cognosy.

JAMES E. TODD, A. M., Assistant Professor of Mineralogy.

ADOLPH ZIEFLE, B. S., Assistant Professor of Pharmacy.

SCOPE OF THE SCHOOL.

The object of this school is to give its students a thorough practical training in all of those branches connected with the pharmaceutical profession in its various departments. A special emphasis is purposely placed upon chemistry, as this is the foundation of all pharmaceutical work. In the department of pharmacognosy there are offered facilities which are deemed adequate to this important branch of pharmacy and medicine.

The three courses offered by the school are arranged logically and progressively; the instruction is given according to modern methods, and in the spirit of those principles which, in their application to other classes of modern technical schools, have proved so eminently successful.

DEGREES. The courses of study in the School of Pharmacy lead to the following degrees:

Bachelor of science.

Pharmaceutical chemist.

REQUIREMENTS FOR ADMISSION.

There are two methods of admission to the School of Pharmacy: First, by examination; second, by certificate.

BY EXAMINATION. Times and place of examination for subjects required for admission to the School of Pharmacy will be found in the General Catalogue, pages 80 and 81.

BY CERTIFICATE. Candidates may enter the School of Pharmacy on certificates from the schools indicated by the next paragraph. The plan of entrance by certificate, noted under "The College" in the General Catalogue, is followed.

FOR THE TWO- AND THREE-YEAR COURSES.

Candidates for admission to these courses must present certificates of graduation from accredited schools, or, in lieu of this, must present certificate covering work equal to that covered by graduation from the eighth grade of a grammar-school in arithmetic, United States history, geography, English grammar, and civil government, and, in addition, either be examined in, or present certificates from high schools, academies or colleges for, physics, Carhart and Chute, or equivalent, and Latin, Bennett's or Robinson's Latin Grammar, or equivalent, and one year of high school botany.

The subjects in which the student may be deficient may be made up during the first year of attendance, either in a special class or at the Lawrence high school.

FOR THE FOUR-YEAR COURSE.

Candidates for admission to the four-year course must conform, by examination or certificate, to the requirements for entrance to the Freshman year of the College. During the first two years students taking the four-year pharmacy course are enrolled in both the College and the School of Pharmacy, and pursue such College courses as are included in the curriculum of the School of Pharmacy. They are required to pay only the College incidental fee as long as their work is confined to courses offered in the College. (See General Catalogue, p. 102.)

SPECIAL STUDENTS.

Special students, not candidates for a degree, may be admitted to the School of Pharmacy without conforming to the requirements for entrance. The admission of such students is under the control of the Dean, and his certificate of recommendation must be procured before the student presents himself to the Registrar.

EXPENSES.

By legislative enactment, a matriculation fee of five dollars (to be paid but once) must be charged each student of Kansas entering the School of Pharmacy. All Kansas students are required to pay an incidental fee of twenty-five dollars at time of registration. Non-residents of Kansas must pay a matriculation fee of ten dollars and an incidental fee of thirty-five dollars. If the student so elects, one-half of the incidental fee may be paid at the beginning of each term. A fee of five dollars is required for diploma.

LABORATORY SUPPLIES. All the laboratories of the University and their equipment of power, engines, machinery, light, desks, tables, balances, microscopes, models and complete apparatus are at the disposal of students, under the direction of their instructors, free of cost. These desks, benches and tables will be further provided with individual sets of tools, sets of working apparatus and equipment, for the care of which the student will be held responsible and will be required to return in good condition. Students are requested to check these up at time of entering a laboratory course, to see that they get all that are

charged to them. At the end of the course, or at the discretion of the instructor, all the individual equipment in good order must be returned. Such as may have been lost, damaged, broken or destroyed by the student must be paid for by him at that time.

Material of every kind consumed, ground up or used in the manifold experiments and practices in laboratories must be paid for by the student, but may be secured where the student elects. Students providing themselves with the exact change may obtain this of the storekeeper in any quantity at the various department storerooms at its cost. For the economic and prompt supply of such material, coupon books, good in all departments, are furnished at the business office in amounts of five dollars and two dollars. Any coupons unused are redeemable in cash at the Secretary's office at the end of the course.

OTHER EXPENSES. There are no dormitories connected with the University. Students find accommodations in the boarding-houses and homes in Lawrence. Information concerning the location of rooming- and boarding-places may be had at the office of the Registrar.

The average price of board, rooms, light and fuel may be placed at \$4 to \$4.50 a week. Day board in private families and at city restaurants may be obtained for \$3 to \$3.50 a week. Day board in clubs varies from \$2.75 to \$3.50 a week. Furnished rooms, usually occupied by two students, range from \$4 to \$15 a month. Unfurnished rooms rent for \$1.50 to \$3 a month. Students who can supply their own furniture and buy and prepare provisions for the table themselves can attend the University for very little cost in money.

The following table shows the estimated expenses of a student of the School of Pharmacy for a year, excluding clothing and traveling expenses; the expense varies with the course pursued, and also depends upon the tastes and habits of the student:

	<i>Low.</i>	<i>Average.</i>
Board	\$120 00	\$160 00
Room	20 00	30 00
Books and stationery.....	10 00	20 00
Laundry	8 00	20 00
Matriculation and other fees..	30 00	30 00
Incidentals	15 00	50 00
Totals	\$203 00	\$310 00

SELF-HELP. Many students find work in private families, in offices, and in various occupations, by means of which they defray a portion of their expenses. Some students have earned their entire expenses while in attendance, and have made good records at the same time; other students have done so much work that they have not been able to keep up their studies, and have thus missed the one thing for which they came. If it is possible for the student to have a part of his expenses paid, he should not attempt to earn his way entirely by his own exertions. It is comparatively easy for a young man to earn half his living while attending the University and yet do good work in his classes. The student should bring with him at least enough money to live comfortably for a few weeks, until he finds something to do. The University cannot guarantee work to any student, but will lend every possible assistance in finding employment. The University Christian Associations maintain employment bureaus, where the names of those seeking work and of those desiring workers are recorded. Students desiring places where they may help themselves are advised to apply to the University Y. M. C. A. or Y. W. C. A., or to the Registrar, University of Kansas, Lawrence.

THE PHARMACEUTICAL SOCIETY.

This society was organized in December, 1886, by the students and instructors of the department, for the purpose of assisting each other in the study of sciences especially related to the art of pharmacy, in the practical applications of the same, and for friendly intercourse. Meetings are held biweekly during the school year.

POSITIONS FOR GRADUATES.

As an adjunct to the Pharmaceutical Society, an "annex" was established in 1890, whose aim it is to secure positions for graduates, and clerks for employers, who are graduates of the school. These graduates, now numbering more than 300, are occupying important positions. The majority of them are located in Kansas and adjoining states. The demand for registered graduates at salaries ranging from \$60 to \$125 per month has, for several years past, been far greater than the school can supply.

LIBRARY.

The school possesses an extensive library, and is the regular recipient of the leading pharmaceutical journals and periodicals of America, England, Germany, and France.

For the convenience of students in chemistry and pharmacy, a branch library is provided in the building and adjacent to the chemical and pharmaceutical laboratories, where all the principal reference books and periodicals may be found.

COLLECTIONS.

The Pharmacy School possesses an extensive herbarium of medicinal plants, together with a collection of photographs representing nearly 200 species. This, in conjunction with the large herbarium of the botanical department, is available to students. Several hundred microscopical slides are at hand for use with the projection lantern, showing various drugs in cross and longitudinal section, as well as in powdered form; a large assortment of lantern slides, illustrating plants, drugs, prescriptions, pharmacies, and places and subjects of pharmaceutical interest; several cases of crystal models; an extensive collection of official and unofficial salts, alkaloids, drugs and medicines, besides numerous smaller collections of particular interest.

LOCATION AND EQUIPMENT.

The School of Pharmacy occupies the first two floors and basement of the east wing of the Chemistry and Pharmacy Building, located in the northwest corner of the campus.

The basement of the pharmacy department contains the drug assay laboratory, where all drugs and chemicals are analyzed for the State Board of Health, a small laboratory in which is carried on all analyses requiring optical apparatus, and the general pharmacy stock-room. The contents of this room are invoiced under the direction of an instructor, every year, by students, as a part of their business training and as a part of their practical drug-store work.

On the first floor are the two large general laboratories, balance-room, supply-room and the office and private laboratory of the secretary of the department. The Junior laboratory accommodates sixty students and is equipped with desks, lockers, and individual gas- and water-supplies. The Senior laboratory is similarly equipped and accommodates fifty-six students. Opening from this on the east is a special balance-room, provided

with analytical balances for the exclusive use of the pharmacy students. The supply-room is conveniently located between the two laboratories. All the material necessary for the special courses in pharmacy can be obtained here.

The office and private laboratory of the Dean, the lecture-room, museum of pharmacognosy and the prescription research laboratory are on the second floor.

The lecture-room, with a seating capacity of 100, is provided with a large lecture-table and abundantly supplied with special pharmaceutical apparatus. The museum of pharmacognosy is directly above the Senior laboratory, and is devoted to the branches of pharmacognosy, pharmacal botany, and microscopy. Ample material is supplied for elucidation of these three important branches of modern pharmacy. In this room is one of the latest improved Bausch & Lomb stereopticons, with microscopical projection attachment, an instrument indispensable to the proper treatment of these subjects.

The prescription research laboratory is located at the rear of the lecture-room, and is equipped after the manner of a regular prescription pharmacy. It is furnished with a thirty-foot work-table provided with gas and water, three large double prescription cases each differing in style and manner of equipment, and fifty feet of tincture shelving. On these shelves are found various patterns of shop-bottles offered to American pharmacists. The entire equipment of the room has been carefully selected, with a view to give comprehensive and varied instruction. In this room practical training is given in the preparation of medicines and the compounding of difficult prescriptions.

Laboratory instruction for pharmacy students is also given in the laboratories of the following departments: Chemistry, botany, mineralogy, physiology, and physics.

APPARATUS.

For the various practical courses offered by this school a large amount of laboratory apparatus, of domestic and foreign types, is supplied. The various laboratories are equipped for manufacturing purposes, so that any preparation of the United States Pharmacopœia can be made by any of the official methods, and, in addition, appliances and materials are at hand for the unofficial and extra-pharmacopœial products.

The lecture-table is abundantly supplied with illustrative apparatus, so that the student may see before him the various

processes in operation which may be carried on in the laboratories and at the prescription counters. Every attention has been given to illustrate pharmacy in all its phases.

The following is a partial list of special apparatus: Bausch & Lomb projection lantern and stereopticon, Laurent half-shade polariscope, Zeiss saccharimeter, spectroscope, refractometer; microscopes: Bausch & Lomb, Spencer, Leitz, etc.; balances: analytical, prescription, counter, solution, torsion, specific gravity, etc.; hydrometers, Beaume and specific gravity, single and in sets; lactometers, urinometers, alcoholmeters, etc.; microtomes, nitrometers, combustion furnaces; Bunsen burners, various patterns; pharmaceutical stills, apparatus for fractional distillation and evaporation *in vacuo*, tablet machines, suppository molds and presses, drug-mills, special percolators and apparatus for hot and cold extraction, continuous extractors, pill-machines, coaters, etc.

REGISTRATION WITH THE STATE BOARD OF PHARMACY.

Graduates of the School of Pharmacy may become registered pharmacists in Kansas without examination upon presenting to the State Board of Pharmacy satisfactory evidence of having had the required amount of practical experience. The practical experience required for the different courses is as follows:

Two and one-half years for graduates of the two-year course.

Twenty-one months for graduates of the three-year course.

One year (twelve months) for graduates of the four-year course.

PROGRAMS OF STUDY.

The School of Pharmacy offers three complete programs of study, one of two years and one of three years—both leading to the degree of pharmaceutical chemist—and one of four years, leading to the degree of bachelor of science.

THE TWO-YEAR PROGRAM.

This is the regular course in pharmacy, first established by an act of the legislature, which leads to the degree of pharmaceutical chemist (Ph. C.) The curriculum is confined to pharmaceutical subjects, and prepares directly for drug-store and dispensing work. The higher work of the other courses gives greater breadth of training, and prepares students for service with larger concerns and with manufacturing chemists.

THE THREE-YEAR PROGRAM.

This course is indorsed by the Kansas Pharmaceutical Association, and is especially recommended to those students who have had no drug-store experience, and to those who desire to avail themselves of the social advantages offered to college students. Special opportunities are offered in this course for work in the field of drug standardization and analysis. The course leads to the degree of Ph. C., and, besides the diploma, a special certificate of proficiency is issued by the Dean upon the completion of the course of study outlined.

THE FOUR-YEAR PROGRAM.

This course, leading to the degree of bachelor of science, from which the student graduates on a plane with the regular students of the College, opens the door, as does the bachelor of arts degree, to the degree of master of arts or doctor of philosophy, should the student desire to pursue his studies to that extent, and thus prepare himself for the higher calling of educational or higher technical work.

TWO-YEAR PROGRAM.

LEADING TO THE DEGREE OF PHARMACEUTICAL CHEMIST.

First Term:

JUNIOR YEAR.

Pharmacal Botany, (*a* and *b*), 8 to 10. Mr. Sterling.

Introductory Pharmacy, (*a* and *b*), 10:15 to 11:15. Mr. Zieffle.

Introductory Chemistry, (*a* and *b*), 1:30 to 3:30. Mr. McFarland.

Second Term:

Galenical Preparations, (*a* and *b*), 8 to 10. Mr. Zieffle.
 Official Pharmacy, (*a*), 10:15 to 11:15. Mr. Zieffle.
 Inorganic Medicinal Salts, (*b*), 10:15 to 11:15. Mr. Emerson.
 Pharmacognosy, (*a* and *b*), 11:15 to 12:15. Mr. Sterling.
 Pharmacy Qualitative Analysis, (*a* and *b*), 1:30 to 3:30. Mr. McFarland.
 Theory and Practice of Pharmacy I, (*a*), 3:30 to 4:30. Professor Sayre.

First Term:

SENIOR YEAR.

Physiology, (*a*), 8 to 10. Professor Hyde.
 Pharmaceutical Testing, (*b*), 8 to 10. Mr. Emerson.
 Vegetable Histology and Study of Powdered Drugs, (*a* and *b*), 10:15 to 12:15. Mr. Sterling.
 Theory and Practice of Pharmacy and Pharmaceutical Chemistry II, (*b*), 3:30 to 4:30. Professor Sayre.
 Pharmacy Quantitative Analysis, (*a*), 3:30 to 5:30. Mr. Landrum.
 Organic Chemistry, (*a* and *b*), 1:30 to 3:30. Professor Duncan.

Second term:

Plant Analysis, (*a*), 8 to 10. Professor Sayre and Mr. Emerson.
 Physiological Chemistry, (*a*), 1:30 to 3:30. Professor Sayre and Mr. Emerson.
 Organic Materia Medica and Pharmacology, (*a* and *b*), 10:15 to 11:15. Professor Sayre.
 Toxicology, 11:15, Thursdays. Professor Bailey.
 Dispensing, (*b*), 8 to 10. Professor Sayre and Mr. Emerson.
 Thesis, (*a* or *b*), 3:30 to 5:30.
 Mineralogy, (*b*), 1:30 to 3:30.

THREE-YEAR PROGRAM.

LEADING TO THE DEGREE OF PHARMACEUTICAL CHEMIST.

First Term:

SOPHOMORE YEAR.

Pharmacal Botany, (*a* and *b*), 8 to 10. Mr. Sterling.
 Introductory Chemistry, (*a* and *b*), 1:30 to 3:30. Mr. McFarland.
 Rhetoric 1, (*a* and *b*), 4:30, three hours per week. Assistant Professors Raymond, Sisson, Gray, and assistant.

Second Term:

Rhetoric 2, (*a* and *b*), 4:30, two hours per week. Assistant Professors Raymond, Sisson, Gray, and assistants.
 Pharmacognosy, (*a* and *b*), 11:15 to 12:15. Mr. Sterling.
 Pharmacy Qualitative Analysis, (*a* and *b*), 1:30 to 3:30. Mr. McFarland.

First Term:

JUNIOR YEAR.

Introductory Pharmacy, (*a* and *b*), 10:15 to 11:15. Mr. Ziefle.
 Physiology, (*a*), 8 to 10. Professor Hyde.
 Pharmaceutical Testing, (*b*), 8 to 10. Mr. Emerson.
 Pharmacy Quantitative Analysis, (*a*), 3:30 to 5:30. Mr. Landrum.
 Organic Chemistry, (*a* and *b*), 1:30 to 3:30. Professor Duncan.

Second Term:

Galenic Preparations, (*a* and *b*), 8 to 10. Mr. Ziefle.
 Official Pharmacy, (*a*), 10:15 to 11:15. Mr. Ziefle.
 Inorganic Medicinal Salts, (*b*), 10:15 to 11:15. Mr. Ziefle.
 Mineralogy, (*b*), 1:30 to 3:30.
 Theory and Practice of Pharmacy I, (*a*), 3:30 to 4:30. Professor Sayre.

First Term:

SENIOR YEAR.

Pharmaceutical Testing, (*a*), 8 to 10. Mr. Emerson.
 Alkaloidal Analysis, (*b*), 8 to 10. Mr. Ziefle.
 Vegetable Histology and Study of Powdered Drugs, (*a* and *b*), 10:15 to 12:15. Mr. Sterling.
 Theory and Practice of Pharmacy and Pharmaceutical Chemistry II, (*b*), 3:30 to 4:30. Professor Sayre.

Second Term:

Plant Analysis, (*a*), 8 to 10. Professor Sayre and Mr. Emerson.
 Physiological Chemistry, (*a*), 1:30 to 3:30. Professor Sayre and Mr. Emerson.
 Toxicology, 11:15, Thursdays. Professor Bailey.
 Organic Materia Medica and Pharmacology, (*a* and *b*), 10:15 to 11:15. Professor Sayre.
 Dispensing, (*b*), 8 to 10. Professor Sayre and Mr. Emerson.
 Thesis, (*a* or *b*), 3:30 to 5:30.

FOUR-YEAR PROGRAM.

LEADING TO THE DEGREE OF BACHELOR OF SCIENCE.

(Sequence of studies recommended.)

FRESHMAN YEAR.

Rhetoric 1 and 2, five hours.

College Algebra, three hours.

Plane Trigonometry, two hours.

Introductory Chemistry and Qualitative Analysis, ten hours.

SOPHOMORE YEAR.

German, ten hours.

Elementary Physics I and II, ten hours.

French, ten hours.

Analytical Geometry,* five hours.

Quantitative Analysis, five hours.

Organic Chemistry, five hours.

JUNIOR YEAR.

Pharmaceutical Botany, five hours.

Introductory Pharmacy, five hours.

Pharmacognosy, five hours.

Official Pharmacy and Inorganic Medicinal Salts, five hours.

Bacteriology, five hours.

Galenical Preparations, five hours.

Theory and Practice of Pharmacy I, two and one-half hours.

First Term:

SENIOR YEAR.

Microscopical Botany and Examination of Powdered Drugs, five hours.

Theory and Practice of Pharmacy and Pharmaceutical Chemistry II, two and one-half hours.

Physiology, two and one-half hours.

Pharmaceutical Testing, two and one-half hours.

Second Term:

Mineralogy, two and one-half hours.

Plant Analysis, two and one-half hours.

Physiological Chemistry, two and one-half hours.

Organic Materia Medica and Pharmacology, four hours.

Toxicology, one hour.

Dispensing, two and one-half hours.

Alkaloidal Analysis, two and one-half hours.

Thesis, two and one-half hours.

* For these may be substituted courses of similar length and grade in the departments of language, biology, or chemistry.

DETAILED COURSES OF STUDY.

BOTANY AND PHARMACOGNOSY.

Professor STEVENS.

Professor SAYRE.

Associate Professor BARBER.

Assistant Professor STERLING.

1.—PHARMACAL BOTANY. Five hours credit. An introduction to morphology and taxonomy of phanerogams, vegetable histology and microchemical technique. Laboratory work, recitations, and lectures. Junior, 1st term, 8 to 10. Assistant Professor Sterling.

2.—ELEMENTARY STRUCTURAL BOTANY. Five hours credit. A study of the structure of phanerogams, with a brief introduction to fungi, algæ, mosses, and ferns. The use of a manual; field-studies. Laboratory work and lectures. 2d term, (*a* and *b*), 1:30 to 3:30. Professor Stevens, Assistant Professor Sterling, and assistant.

3.—VEGETABLE HISTOLOGY. Five hours credit. A study of plant tissues, with special reference to their development and functions; histological technique. Laboratory work and lectures. Open to students who have taken course 2 or its equivalent. 1st term, (*a* and *b*), 1:30 to 3:30. Professor Stevens and assistant.

4.—VEGETABLE HISTOLOGY AND STUDY OF POWDERED DRUGS. Five hours credit. A study of the plant tissues; histological technique and the structural characteristics of the official drugs; the preparation of specimens and the analysis of powdered drugs. Open to all students who have had courses 1 or 3. Laboratory work and lectures. 1st term, (*a* and *b*), 10:15 to 12:15. Assistant Professor Sterling.

5.—BACTERIOLOGY. Five hours credit. Bacteriological technique. Pathogenic bacteria and other forms of economic importance. Laboratory work, reading, and lectures. 2d term, (*a* and *b*), 8 to 10. Associate Professor Barber.

6.—PHARMACOGNOSY. Five hours credit. A study of the geographical distribution, origin and physical characteristics of crude drugs. Lectures, recitations, and laboratory work. Junior, 2d term, at 11:15. Assistant Professor Sterling.

CHEMISTRY.

Professor BAILEY.

Professor SAYRE.

Professor DUNCAN.

Assistant Professor EMERSON.

Assistant Professor MCFARLAND.

Assistant Professor CURTIS.

Assistant Professor BUSHONG.

Assistant Professor ZIEFLE.

1.—INTRODUCTORY CHEMISTRY. Five hours credit. A study of the chemical elements and their compounds. Experimental lectures, recitations, and laboratory work. Junior, 1st term, (*a* and *b*), 1:30 to 3:30. Assistant Professor McFarland and assistants.

2.—PHARMACY QUALITATIVE ANALYSIS. Five hours credit. The isolation and identification of the important elements from mixtures and compounds. Text-book, Bailey and Cady's Guide to the Study of Qualitative Analysis. Must be preceded by course 1 or College courses 1 and 2. Lectures and laboratory work. Junior, 2d term, (*a* and *b*), 1:30 to 3:30. Assistant Professor McFarland.

3.—PHARMACY QUANTITATIVE ANALYSIS. Two and one-half hours credit. A course especially adapted to the needs of the pharmacist, involving the simpler methods of gravimetric and volumetric analysis. Lectures and laboratory work. Must be preceded by course 2. Senior, 1st term, (*a*), 3:30 to 5:30. Professor Bailey and Assistant Professor Landrum.

4.—QUANTITATIVE ANALYSIS. (Course 8 in College.) Five hours credit. A course similar to 3, extending over whole term. 1st term, (*a* and *b*), 3:30 to 5:30. Professor Bailey and Assistant Professor Landrum.

5.—ORGANIC CHEMISTRY. (Course 16 in College.) A study of the hydrocarbons and their derivatives. Lectures and recitations, Monday, Wednesday, and Friday; laboratory work, Tuesday and Thursday. Must be preceded by course 1. Senior, 1st term, (*a* and *b*), 1:30 to 3:30. Professor Duncan and assistant.

*6.—PHARMACEUTICAL TESTING I. Two and one-half hours credit. Laboratory practice in testing the purity and strength of the inorganic medicinal chemicals of the United States Pharmacopœia. Must be preceded by course 3 or equivalent. 1st term, (*b*), 8 to 10. Assistant Professor Emerson.

*7.—PHARMACEUTICAL TESTING II. Two and one-half hours

* Courses 6, 7, 12 and 13 are especially recommended for those students who are preparing themselves for responsible positions as registered

credit. Laboratory practice in testing the purity and strength of the organic drugs and the preparations of the United States Pharmacopœia. Must be preceded by course 3 or equivalent. 2d term, (a), 1:30 to 3:30. Assistant Professor Emerson.

8.—PHYSIOLOGICAL CHEMISTRY. Two and one-half hours credit. A brief course adapted to the needs of the pharmacist, including the study of the carbohydrates, proteins, normal and abnormal products of animal life. Analysis of various secretions, urinalysis, etc. Laboratory work and lectures. Must be preceded by course 1. Senior, 2d term, (a), 1:30 to 3:30. Professor Sayre and Assistant Professor Emerson.

9.—PHYSIOLOGICAL AND MEDICAL CHEMISTRY. Five hours credit. This course is offered to meet the requirements of medical students. Products of physiological interest are separated from animal tissues and organs and studied in detail. Special attention is given to the study of carbohydrates, proteins, and the normal and abnormal products of animal life. The second part of the course consists of five weeks of urinalysis, embracing lectures, recitations, and work in both chemical and microscopical laboratories. 2d term, 1:30 to 3:30. Professor Sayre and Assistant Professor Emerson.

10.—ADVANCED WORK IN PHYSIOLOGICAL CHEMISTRY. Analysis of such dietetics as are used in medicine, and the quantitative estimation of digestive ferments; the preparation of proximate constituents from animal tissues. Must be preceded by course 8, and is open to all students who have passed that subject. Professor Sayre and Assistant Professor Emerson.

11.—PLANT ANALYSIS. Two and one-half hours credit. The separation and estimation of the proximate principles of plant drugs. 2d term, (a), 8 to 10. Professor Sayre and Assistant Professor Emerson.

*12.—ALKALOIDAL ANALYSIS. Two and one-half hours credit. A systematic study of the official alkaloids, including their identification and estimation by physical and chemical means. Lectures and laboratory work. Must be preceded by course 3 or equivalent. Assistant Professor Ziefle.

*13.—DRUG ASSAYING. Two and one-half hours credit. Advanced work in the valuation and standardization of drugs. A

pharmacists; as proprietors of pharmacies, and as pharmaceutical chemists; for special work in analysis of drugs and medicines, now regulated by the pure food and drugs law. The demand for pharmaceutical chemists in large establishments is one that the school will aim to supply, and the courses referred to will prepare students to occupy such positions.

research course, consisting of lectures, laboratory and library work, designed especially for those who desire to do advanced work in the subject. Must be preceded by courses 1 to 7. By appointment. Professor Sayre and Assistant Professor Ziefle.

14.—PLANT ANALYSIS II. A systematic course of advanced work in the analysis of the chemical constituents of plants. Professor Sayre.

15.—ANALYSIS OF NOSTRUMS. Determination of composition of articles with secret formulas. Professor Sayre.

ENGLISH LANGUAGE AND RHETORIC.

Assistant Professor RAYMOND.

Assistant Professor SISSON.

Assistant Professor GRAY.

Assistant Professor GARDNER.

Assistant Professor THOMAS.

Mr. MOORE.

Miss HAYWARD.

1.—RHETORIC AND ENGLISH COMPOSITION. Outlines of rhetoric, with exercises and themes. Required of all Freshmen. 1st term, three hours, at 8, 9, 10:15, 11:15, 3:30, or 4:30. Assistant Professors Raymond, Sisson, Gray, and assistants.

2.—RHETORIC AND COMPOSITION. Two hours, Tuesday and Tuesday, at 8, 9, 10:15, 11:15, 3:30, or 4:30. Assistant Professors Raymond, Sisson, Gray, and assistants.

FRENCH.

Assistant Professor LE DUC.

Assistant Professor NEUEN SCHWANDER.

Assistant Professor SCHOCH.

1.—ELEMENTARY COURSE. Five hours. Grammar (Fraser and Squair) and easy reading. Drill in pronunciation and in forms. 1st term. Five divisions. Daily, at 8, 9, 10:15, 11:15, or 1:30. Assistant Professor Le Duc, Assistant Professor Neuen Schwander, or Assistant Professor Schoch. Prerequisite: Three years of Latin or three years of German.

2.—ELEMENTARY COURSE. Five hours. A continuation of course 1. Reading of simple prose texts, with exercises in dictation and elementary composition. 2d term, daily, at 11:15. Assistant Professor Le Duc, Assistant Professor Neuen Schwander, or Assistant Professor Schoch.

GERMAN.

Associate Professor ENGEL.

Assistant Professor CORBIN.

1.—OUTLINE OF GRAMMAR. Five hours. The first twenty-four lessons of Otis, with composition exercises. Carruth's Reader, about fifty pages. 1st term, daily, at 8, 9, 10:15, 11:15, 1:30, and 2:30; 2d term, daily, at 1:30. Associate Professor Engel or Assistant Professor Corbin.

2.—CARRUTH'S READER, completed, ZSCHOKKE, KLEIST, HEYSE (100 pp.), and SCHILLER'S WILHELM TELL (complete). Five hours. Also special exercise in word order and auxiliary verbs and sight-reading. 2d term, daily, at 8, 9, 11:15, and 1:30; 1st term, daily, at 2:30. Associate Professor Engel or Assistant Professor Corbin.

3.—REVIEW OF GRAMMAR. Five hours. Freytag's Die Journalisten. Geschichte des 30-jährigen Krieges. Outline of German literature in dictations and lectures. Sight-reading. 1st term, daily, at 8, 9, 10:15, 11:15, 1:30, and 3:30; 2d term, daily, at 9. Associate Professor Engle or Assistant Professor Corbin.

MATHEMATICS.

Professor NEWSON.

Associate Professor VAN DER VRIES.

Assistant Professor ASHTON.

2.—ALGEBRA. Quadratic equations, radicals, exponents, fundamental principles of logarithms, and use of logarithmic tables. Wentworth's College Algebra, revised. Three hours, both terms, Monday, Wednesday, Friday: 1st term, 8, 9, 10:15, 11:15, 2:30, and 3:30; 2d term, 9, 11:15, and 3:30. (1) SOLID GEOMETRY, Wentworth's Geometry. Three hours, 2d term, Monday, Wednesday, and Friday, at 1:30. Or (3) PLANE TRIGONOMETRY, Miller's Trigonometry. Two hours, both terms, Tuesday and Thursday: 1st term, at 8, 9, 10:15, 11:15, 2:30, and 3:30; 2d term, at 9, 11:15, 2:30, and 3:30. Assistant Professor Ashton.

4.—ANALYTIC GEOMETRY. Elements of plane analytics, including the geometry of the conic sections, and an introduction to solid analytics. Tanner and Allen's Analytic Geometry, or Ashton's Analytic Geometry. Two hours, both terms: 1st term, at 10:15 and 11:15; 2d term, at 8, 9, 10:15, 2:30, and 3:30. Professor Newson, Associate Professor Van der Vries, and assistant.

MINERALOGY.

Professor HAWORTH.

1.—ELEMENTARY MINERALOGY. Two and one-half hours credit. An abridgement of course 1, the College, including principally crystallography, blowpipe analysis, and a study of ores. 2d term, (b), 1:30 to 3:30. Professor Haworth.

PHARMACY AND MATERIA MEDICA.

Professor SAYRE.

Professor BAILEY.

Assistant Professor EMERSON.

Assistant Professor ZIEFLE.

1.—INTRODUCTORY PHARMACY. Five hours. A study of the subject of weights, measures, specific gravity; the processes employed in the preparation of medicines and the principles of pharmaceutical arithmetic. Lectures and recitations. 1st term, (a and b), 10:15 to 11:15. Assistant Professor Zieffe.

2.—OFFICIAL PHARMACY. Two and one-half hours credit. A systematic study of the official preparations, including their classification, preparation, and preservation. Must be preceded by course 1. Lectures and recitations. 2d term, (a), 10:15 to 11:15. Assistant Professor Zieffe.

3.—GALENICAL PREPARATIONS. Five hours credit. Practical work in the manufacture of standard medicinal preparations, as contained in the Pharmacopœia and National Formulary. Laboratory work and recitations. Must be preceded by course 1. Junior, 2d term, (a and b), 8 to 10. Assistant Professor Zieffe.

4.—INORGANIC MEDICINAL SALTS. Two and one-half hours credit. The source, manufacture, physical properties, general and specific characteristics and identity of inorganic substances used in medicine. Lectures, recitations, and laboratory work. Must be preceded by introductory chemistry. Junior, 2d term, (b), at 10:15. Assistant Professor Zieffe.

5.—THEORY AND PRACTICE OF PHARMACY AND PHARMACEUTICAL CHEMISTRY I. Two and one-half hours credit. A critical review of the preparations of the U. S. Pharmacopœia and National Formulary. Lectures and recitations. Juniors, 2d term, (a), 3:30 to 5:30. Professor Sayre.

6.—ORGANIC MATERIA MEDICA AND PHARMACOLOGY. Four hours. The classification, physical description and chemical constitution of the crude drugs of the pharmacopœias; their chemical and physiological properties, and therapeutic application;

methods of prescribing and dispensing; the action of organic and inorganic chemicals and their physiological relationships. Lectures and recitations. Senior, 2d term, (*a* and *b*), Monday, Tuesday, Wednesday, and Thursday, at 11:15. Professor Sayre.

7.—TOXICOLOGY. One hour. Lectures on the sources, properties, methods for detection and antidotes for poisons. Must be preceded by introductory chemistry. Senior, 2d term, Thursdays, 11:15. Professor Bailey.

8.—THEORY AND PRACTICE OF PHARMACY AND PHARMACEUTICAL CHEMISTRY II. Two and one-half hours credit. A critical review of the official and unofficial organic chemicals used in medicine—volatile oils, alkaloids, glucosids, and a study of the impurities, adulterations, identifications, tests, etc. Senior, 1st term, (*a*), 3:30 to 4:30. Professor Sayre.

9.—DISPENSING. Two and one-half hours credit. Compounding of prescriptions and a practical study of incompatibilities. Lectures and laboratory work. Senior, 2d term, (*a*), 1:30 to 3:30. Professor Sayre and Assistant Professor Emerson.

10.—THESIS. Two and one-half hours credit. Original research in one of the subjects connected with the pharmaceutical profession. An outline of the work should be presented to the Dean by the middle of the second term. Senior, 2d term, (*b*), 1:30 to 3:30.

11.—LIBRARY WORK. Specially designed to familiarize the student with pharmaceutical literature; will include exercises in indexing and reviewing various topics. 2d term, (*b*), hours by appointment. Professor Sayre.

12.—PRACTICAL EXERCISES. Two and one-half hours credit. These will include the care of the prescription room, stock-taking, etc. Must be preceded by courses 1 and 4, and pharmacognosy. By appointment. Assistant Professor Emerson.

13.—Manufacture of artificial fruit essences and other compound ethers. Professor Sayre.

14.—PHARMACEUTICAL JURISPRUDENCE. Relating to the laws pertaining to pharmacy in different states, and to the laws pertaining to the mercantile business, together with practical business suggestions. A course of not less than ten lectures, given in connection with the Pharmaceutical Society. Hours by appointment. Professor Higgins.

15.—INTRODUCTORY PHARMACOLOGY. A special course designed to meet the needs of medical students, comprising weights,

measures and processes used in the preparation of medicines; the geographical distribution, physical properties and identification of crude drugs. Lectures, recitations, and laboratory work. 1st term, (a), 1:30 to 3:30. Assistant Professor Emerson.

PHYSICS.

Professor ———.

Assistant Professor STIMPSON.

1.—ELEMENTARY PHYSICS. Five hours, 1st term. Lectures and recitations, Monday, Wednesday, and Friday, at 9, and two two-hour laboratory periods per week, Monday and Wednesday, from 3:30 to 5:30, or Tuesday and Thursday, from 8 to 10. Open to students of the College and of the Medical and Pharmacy Schools. This course is descriptive and experimental, and is intended for those who desire a general knowledge of the subject, and who have had no previous work in physics. Prerequisites, algebra and geometry. Assistant Professor Stimpson.

2.—ELEMENTARY PHYSICS. Five hours, 2d term. A continuation of course 1, with the same schedule. Assistant Professor Stimpson.

Students who have received credit for entrance physics, one unit, may take either or both of the above courses and receive three-fifths of the regular credits above.

PHYSIOLOGY.

Professor HYDE.

1.—PHYSIOLOGY. A brief course in physiology. Two and one-half hours credit. Lectures and recitations, with demonstrations, based upon the essential structures and functions of the human body, are supplemented twice a week by practical work in the laboratory. The treatment of emergency cases, observations on the action of drugs upon tissues, the relation of the different organs and bones to each other and the structure of the chief tissues are some of the subjects undertaken by each student. Senior, 1st term, (a), 8 to 10. Professor Hyde.

VII. THE SCHOOL OF MEDICINE.

FACULTY.

FRANK STRONG, Ph. D., President.

MERVIN T. SUDLER, Ph. D., M. D., Professor of Gynecology and Anatomy, and Dean of the Scientific Department.

GEORGE HOWARD HOXIE, A. M., M. D., Professor of Internal Medicine, and Dean of the Clinical Department.

EDGAR H. S. BAILEY, Ph. D., Professor of Chemistry.

CLARENCE E. MCCLUNG, Ph. D., Professor of Zoölogy.

IDA H. HYDE, M. D., Professor of Physiology.

LUCIUS E. SAYRE, B. S., Professor of Pharmacy.

JAMES NAISMITH, M. D., Professor of Physical Education.

MARSHALL A. BARBER, A. M., Ph. D., Professor of Bacteriology and Pathology, and Director of the Clinical Laboratory.

JOHN FAIRBAIRN BINNIE, A. M., M. B., C. M., Professor of Surgery, and Head of the Department.

EDWARD G. BLAIR, A. B., M. D., Clinical Professor of Surgery.

JACOB BLOCK, M. D., Professor of Genito-urinary Surgery.

JULIUS BRUEHL, M. D., Clinical Professor of Internal Medicine.

WILLIAM J. FRICK, M. D., Clinical Professor of Surgery.

S. S. GLASSCOCK, M. D., Professor of Neurology.

GEORGE M. GRAY, M. D., Clinical Professor of Surgery.

JEFFERSON DAVIS GRIFFITH, M. D., Clinical Professor of Surgery.

GEORGE F. HAMEL, Ph. G., M. D., Clinical Professor of Surgery.

HENRY O. HANAWALT, M. D., Professor of Neurology, and Head of the Department.

PETER D. HUGHES, A. M., M. D., Clinical Professor of Surgery.

GEORGE CLARK MOSHER, M. D., Professor of Obstetrics, and Head of the Department.

FRANKLIN E. MURPHY, M. D., Professor of Internal Medicine.

JOHN WALTER PERKINS, A. B., M. D., Professor of Surgery (Surgical Diagnosis).

JOSEPH E. SAWTELL, M. D., Professor of Rhinology, and Head of the Department.

EDWARD W. SCHAUFFLER, A. M., M. D., Clinical Professor of Internal Medicine.

ROBERT T. SLOAN, A. M., M. D., Professor of Internal Medicine, and Head of the Department.

- PRESTON STERRETT M. D., Clinical Professor of Internal Medicine.
JOHN H. THOMPSON, M. D., Professor of Ophthalmology, and
Head of the Department.
ISADORE JULIUS WOLF, M. D., Professor of Internal Medicine.
CLARENCE C. GODDARD, M. D., Adjunct Professor of Neurology.
SIMON B. LANGWORTHY, M. D., Adjunct Professor of Neurology.
CHRISTIAN B. STEMEN, M. D., Adjunct Professor of Surgery.
HAMILTON P. CADY, Ph. D., Associate Professor of Chemistry.
SAMUEL C. EMLEY, M. D., Associate Professor of Bacteriology
and Pathology.
HAL FOSTER, A. B., M. D., Associate Professor of Rhinolaryn-
gology.
WILLIAM FRICK, A. M., M. D., Associate Professor of Derma-
tology, and Head of the Department.
DON CARLOS GUFFEY, A. B., M. D., Associate Professor of Ob-
stetrics and Gynecology.
FRANK JOHNSON HALL, M. D., Associate Professor of Clinical
Pathology.
EARNEST J. LUTZ, M. D., Associate Professor of Internal Medi-
cine.
WILLIAM L. MCBRIDE, M. D., Associate Professor of Dermatology.
ERNEST F. ROBINSON, A. B., M. D., Associate Professor of Sur-
gery.
ROBERT MCEWEN SCHAUFFLER, A. B., M. D., Associate Professor
of Surgery.
JOHN N. SCOTT, Ph. G., M. D., Associate Professor of Electro-
therapeutics, and Head of the Department.
WILLIAM KIRK TRIMBLE, M. D., Associate Professor of Clinical
Pathology.
FRANK H. WEISS, Ph. G., M. D., Associate Professor of Pediat-
rics, and Head of the Department.
NIMROD POLK WOOD, M. D., Associate Professor of Internal
Medicine.
WILLIAM J. BAUMGARTNER, A. M., Assistant Professor of Zoölogy.
FRANCIS W. BUSHONG, Sc. D., Assistant Professor of Chemistry.
HERBERT W. EMERSON, B. S., Assistant Professor of Pharmacy.
DAVID F. MCFARLAND, M. S., Assistant Professor of Chemistry.
ROBERT J. CURDY, M. D., Assistant Professor of Ophthalmology.
MAX GOLDMAN, M. D., Assistant Professor of Pediatrics.
JESSE E. HUNT, M. D., Assistant Professor of Pediatrics.
CHARLES J. LIDIKAY, M. D., Assistant Professor of Ophthal-
mology.
HENRY H. LOOK, M. D., Assistant Professor of Ophthalmology.
RUSSELL A. ROBERTS, A. M., M. D., Assistant Professor of Sur-
gery (Rectal Surgery).

EDWARD H. THRAILKILL, M. D., Assistant Professor of Surgery (Rectal Surgery).

JOHN S. WEVER, M. D., Assistant Professor of Ophthalmology.

EUGENE SMITH, M. D., Demonstrator in Anatomy.

GEORGE E. BELLWS, A. B., M. D., Clinical Instructor in Ophthalmology.

FAY P. CLARK, M. D., Clinical Instructor in Electrotherapeutics.

J. HALCOMBE LANING, M. D., Clinical Instructor in Internal Medicine.

RICHARD C. LOWMAN, M. D., Clinical Instructor in Surgery.

JOHN W. MILLER, M. D., Clinical Instructor in Internal Medicine.

ZACHARIAH NASON, M. D., Clinical Instructor in Obstetrics.

AMBROSE TALBOT, A. B., M. D., Clinical Instructor in Internal Medicine.

H. L. CHAMBERS, M. D., Lecturer on General Medicine.

FREDERICK D. MORSE, M. D., Lecturer on History of Medicine.

CHARLES J. SIMMONS, M. D., Lecturer on General Surgery.

D. W. BASHAM, M. D., Lecturer on Surgery.

CLAY COBURN, M. D., Lecturer on State Medicine.

F. M. DAILY, M. D., Lecturer on Professional Ethics.

O. J. FURST, M. D., Lecturer on Climatology.

W. S. HARVEY, M. D., Lecturer on Professional Ethics.

CHARLES S. HUFFMAN, M. D., Lecturer on State Medicine.

C. F. HUTCHINGS, Esq., Lecturer on Medical Jurisprudence.

M. F. JARRETT, M. D., Lecturer on Professional Training and the Correction of Ocular Defects.

W. F. KUHN, A. M., M. D., Lecturer on the Relation of the State to the Insane.

RALPH A. LIGHT, M. D., Lecturer on Restriction of the Right to practice.

O. M. LONGENECKER, M. D., Lecturer on Therapeutics.

B. F. MORGAN, M. D., Lecturer on Anesthetics.

R. J. MORTON, M. D., Lecturer on Exophthalmic Goitre.

J. E. OLDHAM, M. D., Lecturer on Surgery.

C. C. PAYNE, M. D., Lecturer on Massage and Hydrotherapy.

M. C. PORTER, M. D., Lecturer on Surgical Anatomy.

D. R. PORTER, M. D., Lecturer on Life Insurance.

JOHN G. SHELDON, M. D., Lecturer on Surgical Anatomy.

LALIA V. WALLING, A. B., Laboratory Assistant in Physiology.

B. A. POORMAN, M. D., Dispensary Attendant, Surgery.

FORD B. ROGERS, M. D., Dispensary Attendant, Surgery.

THE COUNCIL.

SAMUEL C. EMLEY, A. B., M. D., Bacteriology and Pathology.

EDGAR H. S. BAILEY, Ph. D., Chemistry.

CLARENCE E. MCCLUNG, Ph. D., Zoölogy.
LUCIUS E. SAYRE, B. S., Ph. M., Pharmacy.
HAMILTON P. CADY, Ph. D., Chemistry.
J. D. GRIFFITH, M. D., Surgery.
J. E. SAWTELL, M. D., Special Subjects.
G. C. MOSHER, M. D., Gynecology and Obstetrics.
MARSHALL A. BARBER, A. M., Ph. D., Clinical Pathology.
EDWARD W. SCHAUFFLER, A. B., M. D., Internal Medicine.

HISTORY.

In the act of the legislature establishing the University there was contemplated the founding of a Medical School, but conditions were such that until recently it was not possible to carry out completely the plans which were then laid. Some steps were taken, as opportunity offered, to further the formation of a Medical School, and, in 1880, the "Preparatory Medical Course," under the administration of the College, was started. Until 1899 this was the only indication that the University was interested in the subject of medical education. In this year the School of Medicine was definitely organized, and the first two years of a modern course was offered to students. It was believed that the remaining two years could not profitably be attempted at Lawrence, and so the matter rested until it was thought feasible to put the clinical work upon a foundation sufficiently broad for the building of a Medical School that would compare favorably with the other schools of the University.

Such an establishment became possible through the generosity of Dr. Simeon B. Bell, of Rosedale, Kan., who, in memory of his wife, Eleanor Taylor Bell, gave the University money and property sufficient to build and equip the necessary laboratories and hospitals.

ORGANIZATION.

The work of the School of Medicine is organized under two major departments—the Scientific Department and the Clinical Department—each covering two years, and each having its own separate Faculty and organization.

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I. THE SCIENTIFIC DEPARTMENT.

The work of the first two years is given at Lawrence, under the direction of a dean of students. It consists of the fundamental scientific branches, anatomy, histology, embryology, physiology, pathology, chemistry, bacteriology, etc., which are given in the well-equipped University laboratories. Medical students have all the advantages of libraries, museum and lectures that are to be found in a large educational institution. Matriculation and registration for the first two years are to had at Lawrence.

II. THE CLINICAL DEPARTMENT.

The third and fourth years are given in the laboratories and hospitals at Kansas City and Rosedale, under the charge of a dean of students. In the various hospitals and dispensaries the students have opportunities to work with about 100 ambulant patients daily, while the hospitals affiliated with the University contain some 600 beds. Students of the third and fourth years register with the Dean at Kansas City.

COUNCIL OF THE SCHOOL OF MEDICINE.

The Council of the School of Medicine has charge of matters affecting the School of Medicine as a whole, subject to the rules of the Board of Regents, and is made up of the Chancellor of the University, chairman, the Deans of the two major departments, and five professors, clinical professors or associate professors, from each major department.

I. THE SCIENTIFIC DEPARTMENT.

The scientific department of the School of Medicine, which consists of the fundamental and non-technical courses, was organized in 1899, and has offered work since that time.

EQUIPMENT.

For the work of the first two years of the medical course the entire scientific equipment of the University is available. The University already possessed, when the Medical School was established, laboratories for chemistry, pharmacy, bacteriology and histology of the most approved types. In physiology and anatomy laboratories were provided in the Medical Hall, and the other equipment materially increased. The greater part of the work of the first two years is of a purely scientific character, and most of the student's time is spent in the laboratories. This necessitates providing the very best laboratory facilities possible. And not only has this been done, but most of the instruction is given by men who devote themselves entirely to teaching these pure sciences and are not interested in any other occupation.

Chemistry is given in the Chemistry Building, which is a new, large, airy and commodious building, and not only offers apparatus and facilities for work in the regular courses, but provides everything necessary for the student in graduate work if he wishes to take it. The laboratories for pharmacology and toxicology are in the same building and the equipment is no less generous for these subjects than for chemistry. An animal house to provide material for physiological, pharmacological and bacteriological experiments has been added this year. Laboratories for bacteriology, histology, embryology and pathology are in Snow Hall, and in these subjects each student is provided with a microscope and all necessary apparatus for his exclusive use. The laboratories of physiology occupy the main floor of Medical Hall and are well equipped, having sufficient amount of apparatus so that each student is supplied with a set. The laboratories for gross anatomy and the Dean's office are on the lower floor of Medical Hall, and all facilities are provided for careful, accurate dissection of the human body.

During the past year the number of books and periodicals re-

lating to subjects of the first two years of the medical course has been very materially increased.

ADMISSION.

There are two methods of admission to the School of Medicine: First, by examination; second, by certificate.

BY EXAMINATION. Students who cannot present certificates from accredited colleges will be examined in the subjects required for admission, at the times and place of examination indicated in the General Catalogue, under "The College." Subjects upon which the candidate will be examined are given below.

BY CERTIFICATE. Nearly all students enter the School of Medicine on certificates from other colleges. A certificate from an accredited college granting the degree of bachelor of arts or of science, stating that the applicant has completed one year of the required work for this degree, including general chemistry, will be accepted without examination. Graduates from state normal schools and academies not granting a degree will be accepted, provided the work completed is sufficient to admit them to the Sophomore class of the College of Liberal Arts and Sciences of the University of Kansas. Graduates of state normal schools outside of the state of Kansas, whose credits are accepted by another state university, may be admitted under the same conditions.

A student may be conditioned in six hours' work, which amount can be completed in the following session of the summer school, but this condition must be removed before entering upon the second year's work.

For the high school units required to enter the College, see the catalogue of the College of Liberal Arts and Sciences. Below will be found a representative course giving a credit of one year in the College of Liberal Arts and Sciences in the University of Kansas.

ADVANCE IN REQUIREMENTS FOR ADMISSION.

The entrance requirements to the Medical School will be raised to two years of approved college work, beginning with September, 1909. About one-fourth of the medical schools of the United States have announced similar increased entrance requirements.

The two years of college work should include the following studies, which are taken from the advised course in the College

of Liberal Arts and Sciences in the University of Kansas, and the prospective student of medicine should arrange his work, in whatever college he may be, to conform as nearly as possible to these courses:

FRESHMAN YEAR.

FIRST TERM.

RHETORIC AND ENGLISH COMPOSITION (Course 1). Two hours. Written and oral themes and exercises, with outlines of rhetorical theory.

GERMAN (Course 1). Outline of grammar. Five hours per week, comprising first eighteen lessons of Carruth's Otis's Grammar, with composition exercises. Carruth's Reader, about fifty pages.

ELEMENTARY CHEMISTRY (Course 1). Comprising a study of the elements and their compounds, with the use of Remsen's Briefer Course in Chemistry or some work of the same scope. In this course, six hours a week are devoted to laboratory work, and four to lectures and recitations. An equivalent course is absolutely required of all students entering the medical school.

PHYSICS (Course 1). A course covering properties of matter, heat, and sound. It is descriptive and experimental, and intended for those who desire a knowledge of the subject, but who do not expect to make any technical use of the study, or who have not had any previous knowledge of the branch. Lectures three hours, and laboratory work four hours.

SECOND TERM.

RHETORIC AND ENGLISH COMPOSITION (Course 2). A continuation of the course of previous term.

GERMAN (Course 2). Five hours. Carruth's Reader, completed, Zschokke, Kleist, Heyse (100 pp.), and Schiller's Wilhelm Tell (complete). Also special exercises in word order and auxiliary verbs and sight-reading.

ELEMENTARY FRENCH (Course 1). Five hours' study of grammar and easy reading.

PHYSICS (Course 2). A continuation of the course of work in the first term.

SOPHOMORE YEAR.

FIRST TERM.

GERMAN COMPOSITION (Course 5). Three hours. Translation of connected English. Poll's or v. Jagemann's German Prose Composition, v. Jagemann's German Syntax, Fossler's Practical German Conversation.

ZOOLOGY (Course 1). This course comprises laboratory study of type specimens, together with lectures on the classification, habits and distribution, etc. Ten hours per week is devoted to laboratory work and lecture periods.

FRENCH (Course 2). Five hours. A continuation of the course of previous term. Reading of simple prose texts, with exercises in dictation and elementary composition.

INORGANIC CHEMISTRY (Course 2). Ten hours per week is devoted to laboratory work and lectures on principles of inorganic chemistry.

SECOND TERM.

GERMAN COMPOSITION (Course 6). Two hours, with special drill exercises in grammar and syntax and original compositions.

ZOOLOGY (Course 2). Ten hours a week, devoted to lectures and laboratory work. A continuation of the work begun in course 1, pursued, however, in a more thorough and detailed way. In this division the vertebrates will be studied.

MODERN FRENCH PROSE (Course 3). Three hours per week, Monday, Wednesday, and Friday, at 8. Translation and reading of some works of Merimee, George Sand, Anatole France, and Rene Bazin.

CHEMISTRY: Qualitative Analysis (Course 3). Ten hours a week, with lectures and laboratory work.

SCHEDULE OF STUDIES OF ADVISED COURSE.

FRESHMAN YEAR.

First Term:

Physics, (course 1)....	3 hrs., 9, Mon., Wed., and Fri. 3:30 to 5:30, Mon. and Wed.
German, (course 1)....	5 hrs., daily, 10:15 to 11:15.
Chemistry, (course 1)...	5 hrs., daily, 1:30 to 3:30.
English, (course 1)....	2 hrs., Tues. and Wed., 3:30 to 4:30.

Total..... 15 hrs.

Second Term:

English, (course 2)....	3 hrs., Mon., Wed., and Fri., 9.
Physics,* (course 2)...	3 hrs., Mon., Wed., and Fri., 9 to 10. Mon. and Wed., 3:30 to 5:30.
French, (course 1)....	5 hrs., daily, at 11:15 to 12:15.
German, (course 2)....	5 hrs., daily, 1:30 to 3:30.

Total..... 16 hrs.

SOPHOMORE YEAR.

First Term:

Chemistry, (course 2) ..	5 hrs., Mon., Wed., and Fri., 8 to 9. Tues. and Thurs., 8 to 10.
German, (course 5)....	3 hrs., Mon., Wed., and Fri., 10:15 to 11:15.
French, (course 2)....	5 hrs., daily, 11:15 to 12:15.
Zoölogy, (course 1)....	5 hrs., daily, 1:30 to 3:30.

Total..... 18 hrs.

Second Term:

Chemistry, (course 3) ..	5 hrs., daily, 8 to 10, or
French, (course 3)....	3 hrs., Mon., Wed., and Fri., 8 to 9.
German, (course 6)....	2 hrs., Tues. and Thurs., 10:15 to 11:15.
Zoölogy, (course 2)....	5 hrs., daily, 1:30 to 3:30.

Total..... 15 hrs.

In addition to the above, in the Freshman year, one hour of hygiene and one hour of gymnasium practice are required in the first term, and two hours of gymnasium practice the second term. In the Sophomore one hour of gymnasium practice is required each term.

The courses here outlined summarize the subjects and the amount of work that is desirable for the prospective student of medicine to complete while in the College. As practically every student will have had physics, chemistry or German in the preparatory schools, *this schedule should be modified to suit the needs of the individual.* A student who has completed a course of chemistry equivalent to course 1 is advised to substitute French in its place in the first term of the first year, and to take the two courses of advised chemistry in the Sophomore year. One who enters with credits in German is advised to substitute French in its place in the first and second terms of the Freshman year. A student with a course of satisfactory high-school physics should substitute courses in language or history. In the Sophomore year *the two courses of chemistry are advised only if the student has had an opportunity to take*

* If the student has had high-school physics, a credit of three hours only is allowed for courses 1 and 2.

at least ten hours of French and fifteen hours of German, either in the preparatory course or in the College.

In order to obtain a reading knowledge of French it is necessary for the average student to complete at least ten hours' work, and fifteen hours' work is desirable. In order to obtain a reading knowledge of German about twenty hours' work is required, which necessitates the study of German for at least two years. Three years of some language (preferably Latin) should be taken in the high school as a preparation for the study of German and French.

It is advised that the important subjects are chemistry, equivalent to course 1; zoölogy, equivalent to courses 1 and 2; physics, equivalent to courses 1 and 2, and a reading knowledge of French and German. As every student will have from five to fifteen hours of optional work and still comply with these requirements, the course can be adapted to the needs of the student, and advice will be gladly given to those arranging to take this work. In general, courses in language, history, economics and psychology are advised for these extra periods, in order to give the student as broad a foundation as possible preparatory to the technical studies which follow in the Medical School.

ADVANCED STANDING.

Advanced standing in the third and fourth years of the six-year course is granted only upon examination in those subjects for which credit is desired. These examinations are conducted by the Dean of the Scientific Department for the first two years' work, and by the Dean of the Clinical Department for the work belonging to the fifth year. Candidates desiring such advanced standing must submit in detail a schedule of the work done by them and for which they wish credit; such schedules to be signed by the instructor in each subject or by a competent officer of the institution in which work was done. Students from colleges whose work has been approved by the committee on visitation and affiliation will be admitted without examination. The necessity of a four-year registration in the Medical School must not be forgotten, however.

EXPENSES—SCIENTIFIC DEPARTMENT.

By legislative enactment, a matriculation fee of five dollars (to be paid but once) must be charged each Kansas student entering the School of Medicine. All students are required to pay an incidental fee of twenty-five dollars at time of registra-

tion. In the six-year course, during the first three years the fee will be the incidental fee of the College; in the remaining three years the regular fees of the Medical School will be charged. Non-residents of Kansas must pay a matriculation fee of ten dollars and an incidental fee of thirty-five dollars. If the student so elects, one-half of the incidental fee may be paid at the beginning of each term. Laboratory fees, to cover cost of material used, will be charged by the different departments. The amount of these fees will average about as follows: Anatomy, \$5 per part; physiology, \$10; histology, \$2.50; embryology, \$1; chemistry, \$5 to \$8; physiological chemistry, \$3; bacteriology, \$2.50; pathology, \$2; making the total amount about \$60 per year for residents of Kansas, and about \$80 for non-residents.

All laboratory fees must be paid within ten days of the beginning of the term's work.

REGISTRATION AND ENROLMENT.

The exacting nature of the work in the Medical School makes it necessary for students to enter their classes promptly. Enrolment must therefore be secured within the first week of each term. Students may enter later only for good reasons, but, in the discretion of the Dean of the department, they may have the amount of their work limited.

Application for enrolment by resident students must be made at least two weeks before the end of each preceding term.

EXAMINATIONS.

Examinations will be held for all students during the last days of each course. Final examinations occur on the last day of the term or half-term.

Failures must be made good at the earliest suitable moment. If not removed before the recurrence of the courses, the work will have to be taken in class.

Failure in more than a third of the student's work severs his connection with the University. He may be reinstated only by the action of the Dean of the department.

DEGREES.

Two degrees are open to students in the School of Medicine:

The degree of doctor of medicine is granted to those satisfactorily completing the work of the full four-year medical course.

The degrees of bachelor of arts and doctor of medicine are

conferred upon those completing the full six-year course in the College of Liberal Arts and Sciences and the School of Medicine, as laid down in the catalogue of the College.

AMOUNT OF WORK.

It is not advisable to attempt to carry full work in the Medical School and to engage in outside occupations. If it is necessary for students to earn a portion of their expenses while in school, a longer time will be required to complete the course. Should students for any reason be unable to carry full work, they may, at the discretion of the Dean of the department, be withdrawn from certain courses.

PROGRAMS OF STUDY.

There are two programs of study open to the medical student entering before September, 1909—a four-year program, leading to the degree of doctor of medicine, and a six-year program, in which the student may earn the degree of bachelor of arts at the end of four years and the degree of doctor of medicine after two years more. It is earnestly recommended that the six years' work be taken, since without adequate and thorough preparation the physician starts into work seriously handicapped, and remains throughout his professional career removed from the position of usefulness and influence that he should occupy. By undertaking the six-year program the student may, during the first and second years of his connection with the University, secure training in the modern languages and in the physical and biological sciences that will be of inestimable value to him.

SIX-YEAR PROGRAM.

After September, 1909, this will be the required program for all students. At present it consists of the Freshman and Sophomore work in the College. For entrance requirements, and those relating to the prescribed work of the Freshman and Sophomore work, see other pages of this catalogue.

Registration will be secured in the College for the first three years, and during the fourth year in the Medical School. Medical students must be enrolled in the Medical School during all of the last four years. At the end of the fourth year, on completion of all the requirements of the College, the College will grant the degree of bachelor of arts. Upon the completion of this work the student will enroll in the courses of the third and

fourth years of the Medical School, and will receive the degree of doctor of medicine when satisfactory examinations are taken.

FOUR-YEAR PROGRAM.

In order to comply with various state laws in regard to the issuance of the license for the practice of medicine, all students granted the medical degree must be registered as medical students for four full years. The work of the first and second years is of a general scientific character and given at Lawrence, where excellent facilities exist. The following are the schedules for the first two years' work. For a description of the schedules of the third and fourth years, see this catalogue under Clinical Department.

DAILY SCHEDULE FOR THE FIRST YEAR—FIRST TERM.

Hour.	MONDAY.	TUESDAY.	WEDNESDAY.	THURSDAY.	FRIDAY.
8 to 12 15	Anatomy. Doctor Smith.	Anatomy. Doctors Sudler and Smith.	Anatomy. Doctors Sudler and Smith.	Anatomy. Doctors Sudler and Smith.	Anatomy. Doctor Smith.
1:30 to 2:30	Organic Chemistry. Professor Duncan.		Organic Chemistry. Professor Duncan.		Organic Chemistry. Professor Duncan.
2:30 to 3:30		Organic Chemistry. Laboratory. Professor Duncan.		Organic Chemistry. Laboratory. Professor Duncan.	
3:30 to 5:30	Histology. Professor Baumgartner.	Histology. Professor Baumgartner.	Histology. Professor Baumgartner.	Histology. Professor Baumgartner.	Histology. Prof. Baumgartne

DAILY SCHEDULE FOR THE FIRST YEAR—SECOND TERM.

Hour.	MONDAY.	TUESDAY.	WEDNESDAY.	THURSDAY.	FRIDAY.
8 to 12:15	Anatomy. Doctors Sudler and Smith.	Anatomy. Doctors Sudler and Smith.	Anatomy. Doctor Smith.	Anatomy. Doctors Sudler and Smith.	Anatomy. Doctors Sudler and Smith.
1:30 to 3:30	Physiological Chemistry. Professor Emerson.	Physiological Chemistry. Professor Emerson.	Physiological Chemistry. Professor Emerson.	Physiological Chemistry. Professor Emerson.	Physiological Chemistry. Professor Emerson.
3:30 to 5:30	.....	Embryology. Professor McClung.	.....	Embryology. Professor McClung.	History of Medicine. Doctor Morse.

DAILY SCHEDULE FOR THE SECOND YEAR—FIRST TERM.

Hour.	MONDAY.	TUESDAY.	WEDNESDAY.	THURSDAY.	FRIDAY.
8 to 12:15	* Anatomy. Professor Baumgartner. Physiology. Professor Hyde.	Anatomy. Doctor Sudler and Professor Baumgartner. Physiology. Professor Hyde.	Anatomy. Doctor Sudler and Professor Baumgartner. Physiology. Professor Hyde.	Anatomy. Doctor Sudler and Professor Baumgartner. Physiology. Professor Hyde.	Anatomy. Professor Baumgartner. Physiology. Professor Hyde.
1:30 to 3:30	Bacteriology. Doctor Emley.	Bacteriology. Doctor Emley.	Bacteriology. Doctor Emley.	Bacteriology. Doctor Emley.	Bacteriology. Doctor Emley.
3:30 to 5:30	Pathological Physiology. Doctor Chambers.	Dispensing. Professor Emerson.	Surgery. Doctor Simmons.	Dispensing. Professor Emerson.	.....

* Anatomy for the first half of the term and Physiology for the second half.

DAILY SCHEDULE FOR THE SECOND YEAR—SECOND TERM.

Hour.	MONDAY.	TUESDAY.	WEDNESDAY.	THURSDAY.	FRIDAY.
8 to 11:15	Physiology. Professor Hyde.	Physiology. Professor Hyde.	Physiology. Professor Hyde.	Physiology. Professor Hyde.	Physiology. Professor Hyde.
11:15 to 12:15	Materia Medica. Professor Sayre.	Materia Medica. Professor Sayre.	Materia Medica. Professor Sayre.	Materia Medica. Professor Sayre.	Toxicology. Professor Bailey.
1:30 to 3:30	Pathology. Doctor Emley.	Pathology. Doctor Emley.	Pathology. Doctor Emley.	Pathology. Doctor Emley.	Pathology. Doctor Emley.
3:30 to 5:30	Pathological Physiology. Doctor Chambers.	Physical Diagnosis. Doctor Naismith.	Surgery. Doctor Simmons.	Physical Diagnosis. Doctor Naismith.	Pathological Physiology. Doctor Chambers.

REQUIRED STUDIES AND NUMBER OF HOURS.

(Arranged in accordance with the standard adopted by the Association of American Medical Colleges.)

FIRST YEAR—FIRST TERM.

	Di-dactic.	Labo-ratory.	Total.
<i>Histology:</i>			
Lectures, quizzes, and laboratory.....	...	...	180
<i>Anatomy:</i>			
Osteology	16	64	80
Dissecting, with individual quizzes.....	...	...	260
<i>Chemistry</i>	54	126	180
Total hours .....	...	...	700

FIRST YEAR—SECOND TERM.

	Di-dactic.	Labo-ratory.	Total.
<i>Embryology</i>	22	50	72
<i>Anatomy</i>	60	300	360
<i>Chemistry</i>	54	126	180
<i>History of Medicine</i>	18	...	18
Total hours	154	476	630

SECOND YEAR—FIRST TERM.

	Di-dactic.	Labo-ratory.	Total.
<i>Anatomy (a):</i>			
Neurology	36	124	160
<i>Physiology (b)</i>	60	100	160
<i>Bacteriology</i>	54	126	180
<i>Surgery</i>	36	...	36
<i>Pathological Physiology</i>	36	...	36
<i>Dispensing</i>	18	54	72
Total hours	240	404	644

SECOND YEAR—SECOND TERM.

	Di-dactic.	Labo-ratory.	Total.
<i>Physiology</i>	110	160	270
<i>Materia Medica</i>	146	...	146
<i>Toxicology</i>	18	...	18
<i>Pathology</i>	54	126	180
<i>Pathological Physiology</i>	72	...	72
<i>Physical Diagnosis</i>	36	36	72
<i>Surgery</i>	36	...	36
Total hours	472	322	794

UNIVERSITY PHYSICIAN.

The University Physician was appointed in order to look after sick students away from home, giving them the same care and attention that they would have if they had their parents to care for them; to consult with students in all matters relating to health; to be easily available to all students with trivial ailments, and to prevent, when possible, such ailments from becoming

ing serious; to provide necessary medical services gratuitously to those students who are making their way through the University and who would be compelled to leave if medical services were added to their expenses; to work with the University Health Committee in seeking out and eliminating special sources of infection, and in preventing the spread of infectious and contagious diseases among the students. This work is in charge of Dr. S. C. Emley, of the Department of Pathology.

DETAILED COURSES OF STUDY.

ANATOMY.

Professor SUDLER.

Professor McCLUNG.

Assistant Professor BAUMGARTNER.

Doctor SMITH.

Mr. CLARK, Fellow.

EQUIPMENT.—The laboratories for gross anatomy and dissecting occupy the lower floor of Medical Hall. The dissecting rooms are well lighted and comfortable. During the last year the equipment has been much enlarged and more material for the student has been provided, including dissections, osteological preparations, models and neurological preparations. The department also acknowledges the gift of the fine plates of Hirschfield and Leveille by D. L. Rowlands, Esq., of Lawrence. A special effort is made to embalm the dissecting material so as to give absolutely the best result, and material assigned to students is perfectly sterile; the softness and natural color of the tissues are well preserved. A fee is charged each student, covering the actual cost of material consumed. He is furnished a skeleton for study and is expected to provide dissecting instruments and two gowns for use in the dissecting room. Histology and embryology are given in well-equipped laboratories in Snow Hall. For the details of the equipment, see page 333.

1.—DESCRIPTIVE ANATOMY. Seven hours, 1st term, daily, 8 to 12:15. The first two weeks are occupied by a study of osteology. The vertebral column is considered from a morphological standpoint, and the various bones studied by means of drawings and modeling. The balance of the term is devoted to dissection of the arm and leg, and study of the various preparations and models illustrating these parts. Professor Sudler and Doctor Smith.

2.—DESCRIPTIVE ANATOMY. Eight hours, 2d term, daily, from 8 to 12:15. During this term the abdomen, thorax and head are carefully dissected and studied. This course is simply a continuation of course 1. Professor Sudler and Doctor Smith.

3.—THE CENTRAL NERVOUS SYSTEM. Four hours, 1st term, daily. 8 to 12:15. This is a study of the gross anatomy of the cord and brain by means of dissections and models. A number

of new preparations have been provided, including both dissections and microscopical sections. The latter, which were made in the histology laboratory and number nearly 600, are stained by the Weigert method, and are demonstrated by the microscope and lantern. The various nuclei of the cranial nerves and the most important tracts of the cord and brain are considered. Professor Sudler and Mr. Baumgartner.

4.—OPTIONAL WORK FOR ADVANCED STUDENTS. This work is done individually, and is arranged to suit the needs and the ability of the student. In a large measure, it will consist of a study of cross-sections, special dissections, and preparation of anatomical material. Professor Sudler.

5.—HISTOLOGY, OR MICROSCOPICAL ANATOMY. Five hours, 1st term, daily, 3:30 to 5:30. Microscopical manipulation, the study of normal tissues and the methods of preparing mounted objects are presented in this course. Lectures and laboratory work. Required of first-year medical students. Assistant Professor Baumgartner and Mr. Clark.

6.—EMBRYOLOGY. Two hours, 2d term, Tuesday and Thursday, 3:30 and 5:30. The general principles of ontogenetic development, with special application to man. Lectures, text-book work, and laboratory exercises. Required of first-year medical students. Professor McClung and Mr. Clark.

BACTERIOLOGY AND PATHOLOGY.

Associate Professor EMLEY.

Doctor CHAMBERS.

Mr. J. R. VAN ATTA.

1.—BACTERIOLOGY. Five hours, 1st term, daily, 1:30 to 3:30. Bacteriological technique and the study of pathogenic bacteria from a medical and diagnostic point of view. A laboratory and didactic course. Required of second-year students. Associate Professor Emley and Mr. Van Atta.

2.—PATHOLOGICAL PHYSIOLOGY. Three hours, 1st term, Monday, at 3:30; 2d term, Monday and Friday, at 3:30. This is a course of lectures and recitations covering the principles of diagnosis and placing a special emphasis on the derangements of function. It strives to make the transition from a study of normal physiology to that of clinical physiology and pathology easy and satisfactory. In fact, the attempt is made to make the course bear the same relation to normal physiology that cellular pathology does to normal anatomy and histology. Considerable attention is given to the various compensations, adaptations and

regenerations that occur in the attempt of the individual to master disease, and to give a rational understanding of the symptoms which are later studied at the bedside. Required of Sophomore students. Doctor Chambers.

3.—GENERAL PATHOLOGY. Five hours. Two hours each day during the second term, 1:30 to 3:30. A laboratory and didactic course. Required of second-year students. Associate Professor Emley and Mr. Van Atta.

4.—ADVANCED BACTERIOLOGY AND PATHOLOGY. Five hours. Open to medical students who have had sufficient preparation. Associate Professor Emley.

See, also, Pathology (clinical).

CHEMISTRY.

Professor BAILEY.

Professor DUNCAN.

Assistant Professor MCFARLAND.

Assistant Professor BUSHONG.

1.—GENERAL CHEMISTRY. 1st term, daily, 1:30 to 3:30. Laboratory work three afternoons each week, and lectures two afternoons, from 1 to 3. In this course special attention is given to the development of the laws that underlie the theories of chemistry, and those theories are illustrated by a study of the simple elements. This is followed by a study of the bodies formed by the combination of the elements. The course with the non-metallic elements is followed by a careful study of the metals, including their source, methods of preparation, properties, uses, and the uses of the compounds in the arts and in medicine. The study of methods for writing reactions and of chemical problems is carried on in connection with the daily lectures and recitations. In the laboratory work, the student first learns the simpler problems of chemical manipulation, then the practical methods of preparing the ordinary gaseous elements and their compounds, and afterwards of the acids, ammonia, etc. Frequent recitations are held, in order to show the proficiency of the student, and a final examination determines his knowledge of the whole subject. Text-book, Long's Elements of General Chemistry. Assistant Professor McFarland and assistants.

2.—ORGANIC CHEMISTRY. Lectures and recitations, five hours. The course in organic chemistry is a continuation of the course in general chemistry. The lectures will treat of the occurrence, methods of preparing and the properties of the various classes

of organic compounds; as, the hydrocarbons, alcohols, ethers, aldehydes, sugars, starches, etc. 1st term, Monday, Wednesday, and Friday, 1:30 to 2:30. Laboratory, Tuesday and Thursday. This course may be followed by an advanced course in organic chemistry, including organic preparations. Professor Duncan and assistants.

3.—QUALITATIVE ANALYSIS. This course covers the general methods for the detection and separation of the metals and acids. This is largely carried on by laboratory work, with occasional lectures on the theory. Five exercises per week, throughout the second term. This course is not accepted for College or engineering credit. 2d term, daily, 1:30 to 3:30. Assistant Professor McFarland.

4.—TOXICOLOGY. A discussion of the sources, properties, methods of detection, *post-mortem* appearances, fatal dose and methods of treatment in case of the inorganic and organic poisons. Lectures, with examinations. One exercise per week, Friday, at 11:30. Professor Bailey.

5.—PHYSIOLOGICAL AND MEDICAL CHEMISTRY. Five hours, 1st term, 1:30 to 3:30. This course is offered to meet the requirements of medical students. Products of physiological interest are separated from animal tissues and organs and studied in detail. Special attention is given to the study of carbohydrates, proteins, and the normal and abnormal products of animal life. The second part of the course consists of five weeks of urinalysis, embracing lectures, recitations, and work in both chemical and microscopical laboratories. Required of first-year students. Text: Hammerstine's Physiological Chemistry. Professor Sayre and Assistant Professor Emerson.

6.—ADVANCED WORK IN PHYSIOLOGICAL CHEMISTRY. The advanced study of any special branch of chemical physiology tending toward original work. Open to students having had general, qualitative, quantitative, organic and physiological chemistry. Either or both terms, by appointment. Professor Sayre and Assistant Professor Emerson.

HISTORY OF MEDICINE.

Doctor MORSE.

1.—SIXTEEN LECTURES ON THE HISTORY OF MEDICINE. Friday, at 3:30, during the second term. Required of first-year medical students. Doctor Morse.

PHARMACOLOGY AND THERAPEUTICS.

Professor SAYRE.

Assistant Professor EMERSON.

The courses offered in the department are especially adapted to the study of drugs and remedial agents, and are designed to meet the requirements of the medical student. They teach him to recognize, and to know the properties of, all the more important crude drugs and medicinal agents, and the various medicinal preparations made from them.

1.—PHARMACOLOGY AND MATERIA MEDICA. Five hours, 2d term, Monday, Tuesday, Wednesday, and Thursday, at 11:15. Classification, chemical and physiological properties of drugs, therapeutical application, methods of prescribing and dispensing, the action of organic and inorganic medicinal chemicals and their physiological relationships are taught. Lectures and recitations. Required of second-year students. Professor Sayre.

2.—PHARMACY, DISPENSING, AND PHARMACOGNOSY. Two hours, 1st term, Tuesday and Thursday, 3:30 to 5:30. A special course designed to meet the needs of medical students, comprising weights, measures and processes used in the preparation of medicines; the geographical distribution, physical properties and identification of crude drugs. Lectures, recitations, and laboratory work. Required of second-year students. Assistant Professor Emerson.

3.—TOXICOLOGY. A discussion of the source, properties, methods of detection, *post-mortem* appearances, fatal dose and methods of treatment in case of the inorganic and organic poisons. Lectures, with examinations. One exercise per week, throughout the second term. Professor Bailey.

PHYSICAL DIAGNOSIS.

Doctor NAISMITH.

PHYSICAL DIAGNOSIS.—Two hours, 2d term, Tuesdays and Thursdays, 3:30 to 5:30. A course of lectures, recitations, and practice designed to give the student a knowledge of the normal chest and abdomen, and the technique of obtaining the various physical signs.

PHYSIOLOGY.

Professor HYDE.

Mr. CARTER.

Miss WALLING.

The physiological department is thoroughly equipped with approved modern apparatus for demonstration and experimental work.

Besides a large lecture-room that seats 100 students, it possesses a department library for the use of the students. The library contains the latest reference books and all of the best physiological journals.

The medical laboratory is equipped with specially planned tables, that have gas, water and electrical connections. Each table is supplied with a complete outfit of the best modern apparatus, sufficient for the investigation of hundreds of experiments. Two students are assigned to each table. The department also has a large laboratory for the pharmacy and College students, that contains tables particularly designed for their work. In this laboratory are, besides the needed instruments, digesters, spirometers, kymographs, manometers, and all kinds of electrical apparatus, a skeleton, and an Auzou French manikin.

The research-room is fitted up with necessary tables, instruments and electrical apparatus for any kind of physiological experiments. There is also a large preparation-room, where most of the material is prepared, and a store-room.

5.—PHYSIOLOGY. Ten hours. Daily, throughout the year, 8 to 12:15, 1st term, (b) ; 8 to 11:15, 2d term. Recitations and lectures, with demonstrations, conferences, and journal club, and laboratory experimental work. Required of second-year medical students. Professor Hyde, Mr. Carter, and Miss Walling.

6.—PHYSIOLOGY. Five hours. Graduate course. Experimental physiology and original research. Open to students who have taken not less than a year of anatomy and physiology and have given evidence that they are prepared for it. Professor Hyde, Mr. Carter, and Miss Walling.

SURGERY.

1.—SURGICAL PRINCIPLES. A course of lectures, recitations and quizzes. One hour and a half each week during both terms. There are discussed the principles of asepsis in surgery, repair of divided tissues, conditions of regeneration, surgical fevers, etc. Text-book, Nancrede's Principles of Surgery. Doctor Simmons.

II. THE CLINICAL DEPARTMENT.

The Clinical Department was organized in the fall of 1905 by the merger of the Kansas City Medical College, founded in 1869; the Medico-Chirurgical College, founded in 1896; and the College of Physicians and Surgeons, founded in 1893. It was made possible by the acceptance on the part of the Regents of the University of certain tracts of land in and about Rosedale, Kan., donated by Dr. Simeon B. Bell, of that city. The department was opened in the fall of that year, with its laboratory and lecture-rooms in the building of the College of Physicians and Surgeons, Kansas City, Kan., and its dispensary in the building of the Medico-Chirurgical College, 918 Independence avenue, Kansas City, Mo. The erection of new buildings in Rosedale was immediately begun, and in the winter of 1906-'07 the new laboratory building and the pavilion for internal medicine, at Rosedale, were occupied—the laboratory and lecture equipments being removed at that time to Rosedale.

The Clinical Department is divided into five subdepartments for administrative purposes. These are medicine, surgery, pathology and hygiene, gynecology and obstetrics, and the specialties. Each of these departments sends a representative to the Council of the School of Medicine.

EQUIPMENT.

The laboratory of clinical pathology occupies a building 50 x 100 feet, three stories in height. The teaching laboratory is equipped with a microscope for each student and other accessories for instructional purposes; and, since it has been built specially for the purpose, is well adapted to its needs. The department has a Thompson projectoscope for showing both microscopic slides and photographs upon the screen. There is also a well arranged and very complete collection of pathological material, accessible for daily study. The animal rooms provide the opportunity for instructive tests and researches.

The library consists at present chiefly of files of periodicals, with some standard reference works. It is being added to rapidly, both by purchase and gift. The following periodicals are kept on file for current reading: Journal of the American Medical Association, British Medical Journal, London Lancet, Boston Medical and Surgical Journal, New York Medical Rec-

ord, *Annals of Surgery*, *Centralblatt für Chirurgie*, Knapp's *Archives of Ophthalmology*, *Archiv für Gynakologie*, *Annales de Gynecologie*, *Journal of Comparative Pathology*, *Journal of Pathology*, *London Practitioner*, *Annales de l' Institut Pasteur*, *Arbeiten a. d. kaiserl. Gesundheitsamte*, *Archiv. für path. Anatomie*, *Beiträge zur path. Anatomie*, *Dermatologisches Centralblatt*, *Folio Hæmatologica*, *Centralblatt für Innere Medicin*, *Quarterly Review of Medicine (London)*, *Therapie d. Gegenwart*, *Annals of Otology*, *Rhinology and Laryngology*, *British Journal of Children's Diseases*, *Hygienisches Rundschau*, *Berliner klin. Wochenschrift*, *Journal of Hygiene*, *American Medicine*, *Pediatrics*, *Bulletin of Johns Hopkins Hospital*, *Archives of Pediatrics*, *Surgery, Gynecology and Obstetrics*, *Edinburgh Medical Journal*, *Journal of Nervous and Mental Diseases*, *Therapeutisches Monatsheft*, *Journal of Infectious Diseases*, *Journal of Experimental Medicine*, *The Postgraduate*, *Medical Review of Reviews*, *The Medical Standard*, with some sixty others of more or less local importance.

The North End Dispensary, at 902 Independence avenue, Kansas City, Mo., is provided not only with treatment rooms for ambulant patients, but contains some twelve beds for handling patients needing temporary hospital care.

The Eleanor Taylor Bell Memorial Hospital, conducted by the University, now contains thirty-six beds, and is prepared to treat both surgical and medical cases. It is on the same grounds with the laboratory and therefore in excellent location for teaching, as well as thereby affording the patients better facilities for the study and treatment of their cases. Both private and clinical cases are admitted to the hospital. The former pay full hospital fees and may choose for their physician any member of the Faculty of the School of Medicine. Clinical patients do not pay for their medical service, and are therefore treated by the staff of the hospital and pay only the cost of their keeping in the hospital. Professors Binnie, Sudler, Schauffler and Robinson operate here regularly; and work is shown from time to time by other members of the Faculty also. Professor Hoxie demonstrates the medical cases, Professor Guffey the obstetrical, Professor Sudler the gynecological, and Professor Lidikay the ophthalmologic.

St. Joseph's Hospital contains some 200 beds, and amphitheater clinics are shown there in surgery by Professor Griffith, and in electrotherapy by Professor Scott.

St. Margaret's Hospital contains some 300 beds, and is vis-

ited by a group of students each week-day. This ward work has proven to be very valuable for advanced students. Professors Perkins, Gray, Blair and Lowman operate here; medical cases are shown by Professor Wolf and Doctor Miller; eye cases are demonstrated by Professors Bellows and Lidikay; nose and throat cases are shown by Professor Foster.

Bethany Hospital has some sixty-five beds, and work is shown therein by Professors Hughes and Stemen in surgery, and Professor Sterrett in medicine.

The Missouri Pacific Hospital affords our students considerable work in emergency and railway surgery, under Professor Hamel.

The new Wesley Hospital affords Prof. W. J. Frick an excellent opportunity to demonstrate clinical surgery to groups of six men once a week.

ADMISSION.

Students are admitted to the Clinical Department upon a certificate from the Scientific Department, or upon examination in the subjects already pursued by the class to which the student seeks admission. The part of this catalogue devoted to the Scientific Department of the School of Medicine should be consulted for requirements for entrance to the first year of medicine and for the work of the first two years, upon which the work of the Clinical Department is based.

EXPENSES—CLINICAL DEPARTMENT.

The tuition is \$100 a year, which covers all expenses except those for materials broken, wasted, or consumed in experiments by the student. A stock-room is provided where students may purchase any needed material, or, they may purchase the same, if they prefer, in the open market. Fifty dollars of the tuition is payable in September, and fifty dollars in February.

For those students who have not been enrolled in the University of Kansas, a matriculation fee of five dollars for Kansans, and ten dollars for non-Kansans, is required, payable but once.

REQUIREMENTS FOR GRADUATION.

The Clinical Department requires the satisfactory completion of 2458 actual hours. Each student, to be in regular course for graduation, must take at least eighteen units of work each term. In terms of such units the course in the Clinical Department specifies 105, which must be satisfactorily completed before any

student will be recommended for a degree. (A "unit" is one hour of recitation or lecture, or one two-hour laboratory or clinical period, pursued for eighteen weeks.)

REQUIRED STUDIES.

JUNIOR CLASS (OR THIRD YEAR—FIRST TERM).

	Di- dactic.	Labo- ratory.	Clinics.	Dispen- sary.	Total.
<i>Surgery</i>	54	....	36	18	108
<i>Medicine</i> :					
Physical diagnosis.....	....	....	27	72	99
Pathology and therapy	90	....	....	....	90
<i>Obstetrics</i> :					
Physiological pregnancy and labor.....	54	....	....	....	54
<i>Gynecology</i> :					
Diseases of women.....	54	....	....	....	54
<i>Pathology</i> :					
Post-mortem technique....	....	10	....	....	10
Microscopic studies.....	36	54	....	....	90
Microscopic demonstrations	....	18	....	....	18
<i>Therapeutics</i>	36	....	....	....	36
Total hours.....	324	82	63	90	559

JUNIOR CLASS (OR THIRD YEAR—SECOND TERM).

	Di- dactic.	Labo- ratory.	Clinics.	Dispen- sary.	Total.
<i>Surgery</i> :					
Orthopedic.....	18	....	18	....	36
Cranial.....	18	....	....	....	18
Genito-urinary	18	....	....	....	18
Clinical .....	....	....	36	18	54
<i>Gynecology</i> : Clinical.....	....	....	54	....	54
<i>Obstetrics</i> :					
Pathological.....	36	....	....	....	36
Practical.....	....	....	....	2 births.	36
<i>Ophthalmology</i> : Lectures....	36	....	....	....	36
<i>Medicine</i> :					
Pathology and therapy	36	....	27	....	63
Children's diseases	18	....	....	....	18
Diagnosis .....	....	....	....	72	72
Nervous diseases	36	....	....	....	36
<i>Therapeutics</i> :					
Clinical therapeutics.....	36	....	....	....	36
<i>Rhinology and Laryngology</i> :					
Beginners' course.....	18	....	....	18	36
<i>Dermatology</i> : General.....	18	....	....	18	36
<i>Pathology</i> : Post-mortem pa- thology	36	72	....	....	108
Total hours	324	72	135	126	657

SENIOR CLASS (OR FOURTH YEAR—FIRST TERM.)

	Di- dactic.	Labo- ratory.	Clinics.	Dispen- sary.	Total.
<i>Pathology:</i>					
Clinical microscopy	36	36	....	....	72
Hygiene.....	36	....	....	....	36
<i>Medicine:</i>					
Dietetics	36	....	....	....	36
Ward classes.....	....	....	18	....	18
Mental diseases	36	....	....	....	36
Dispensary.....	....	....	....	72	72
Nervous diseases .....	....	....	36	....	36
Pediatrics .....	....	....	36	....	36
<i>Obstetrics:</i>					
Practical.....	....	....	....	2 births.	....
Manikin.....	....	18	....	....	18
<i>Surgery:</i>					
Rectal.....	18	....	....	....	18
Ward classes.....	....	....	18	....	18
Diagnosis	36	....	....	....	36
Clinical.....	....	....	54	....	54
Operative technique.....	....	18	....	....	18
<i>Otology</i>	18	....	....	....	18
<i>Gynecology: Clinical</i>.....	....	....	54	36	90
<i>Rhinology and Laryngology</i>, .....	....	....	18	18	36
<i>Dermatology</i> .....	....	....	18	18	36
<i>Medical Economics</i>	18	....	....	....	18
<i>Ophthalmology and Otology</i>, .....	....	....	18	18	36
Total hours.....	234	74	272	162	738

SENIOR CLASS (OR FOURTH YEAR—SECOND TERM.)

	Di- dactic.	Labo- ratory.	Clinics.	Dispen- sary.	Total.
<i>Surgery:</i>					
Sectional clinics .....	....	....	108	....	108
Ward classes.....	....	....	18	....	18
Rectal .....	....	....	....	18	18
Genito-urinary .....	....	....	....	18	18
Operative technique.....	....	18	....	....	18
<i>Medicine:</i>					
Ward classes.....	....	....	18	....	18
Dispensary.....	....	....	....	72	72
Nervous diseases	18	....	....	....	18
Pediatrics .....	....	....	18	18	36
<i>Ophthalmology and Otology</i>, .....	....	....	18	18	36
<i>Gynecology</i> .....	....	....	....	18	18
<i>Obstetrics:</i>					
Practical.....	....	....	....	2 births.	....
Manikin.....	....	18	....	....	18
<i>Massage and Hydrotherapy:</i>	18	....	....	18	36
<i>Medical Economics</i>	18	....	....	....	18
<i>Electrotherapy</i>	18	....	36	....	54
Total hours.....	90	36	216	162	504

DISPENSARY AND WARD SECTIONS.

1908.	1	2	3	4	5	6	7	1909.
Sept. 21.....	Med.	Surg.	Eye.	Bell.	Gynec.	Ped.	Drugs.	Feb. 6
Oct. 5.....	Drugs.	Med.	Surg.	Eye.	Bell.	Gynec.	Ped.	Feb. 20
Oct. 19.....	Ped.	Drugs.	Med.	Surg.	Eye.	Bell.	Gynec.	Mar. 6
Nov. 2.....	Gynec.	Ped.	Drugs.	Med.	Surg.	Eye.	Bell.	Mar. 20
Nov. 16.....	Bell.	Gynec.	Ped.	Drugs.	Med.	Surg.	Eye.	Apr. 3
Nov. 30.....	Eye.	Bell.	Gynec.	Ped.	Drugs.	Med.	Surg.	May 1
Jan. 4, 1909.....	Surg.	Eye.	Bell.	Gynec.	Ped.	Drugs.	Med.	May 16

DETAILED COURSES OF STUDY.

DERMATOLOGY.

(Skin and Venereal Diseases.)

Associate Professor WILLIAM FRICK.

Associate Professor McBRIDE.

This subject cannot be successfully taught apart from the demonstration of the actual lesions. Therefore the didactic and the clinical instruction are given together in the dispensaries. The first course is given during the third year, in order that the student may have all the succeeding terms in which to digest and assimilate the information thus given in rather intensive form. The subject of syphilis is included in the instruction afforded by the department. The following are the required courses:

1.—INTRODUCTORY COURSE. One hour. The anatomy and physiology of the skin, together with the symptomatology, pathology and clinical manifestations of the commoner skin diseases. Required of Juniors. 2d term, Thursday, at 1:30. Associate Professor McBride.

2.—ADVANCED COURSE. One hour. Lectures and demonstrations of the various skin diseases. Required of Seniors. 1st term, Monday, at 3. Associate Professor Frick.

GYNECOLOGY.

Professor SUDLER.

Associate Professor GUFFEY.

Adjunct Professor LANGWORTHY.

The required work in this department is three hours of didactic instruction, two hours of clinics in the hospitals, and two hours of dispensary clinics. The student is introduced to the subject by three hours of work devoted to lectures, quizzes, and demonstrations of pathological material illustrating the subjects discussed. This is followed in the second term of the Junior year and the first term of the Senior year by clinics and hospital work. The work in gynecology the second term of the Senior year is optional. In giving instruction in this subject a special effort is made to have the student do as much of the work as possible, under proper guidance and supervision. The history of the patient, the description of the operation or treatment, and

the pathology, as well as the study of the case as long as it is in the hospital or in the dispensary, is assigned to individual students in rotation. The following courses are offered:

1.—DISEASES OF THE FEMALE GENITAL TRACT. Three hours, 1st term, Monday, Wednesday, and Friday, at 11. Lectures quizzes, and demonstrations of illustrative pathological material. Required of Juniors. Professor Sudler and Adjunct Professor Langworthy.

2.—CLINICAL GYNECOLOGY. One hour, 1st term, Friday, at 3, at the Eleanor Taylor Bell Memorial Hospital. Operative clinics and clinical lectures. Required of Seniors. In this course the students act as assistants, and are taught also the technique of the modern operating-room as applied to gynecology. Professor Sudler and Associate Professor Guffey.

3.—SAME. Continuation of course 2. Required of Seniors. 1st term, Friday, at 3. Professor Sudler and Associate Professor Guffey.

4.—GYNECOLOGICAL DIAGNOSIS. Practical work in the dispensary. One hour, 1st term. Two students are assigned to the gynecological department of the North End Dispensary and are on duty daily two weeks at a time—in this way getting practical experience in the diagnosis and treatment of the various morbid conditions. Required of Seniors. Associate Professor Guffey.

5.—SAME. Second term. Required of Seniors. Associate Professor Guffey.

HYGIENE.

Professor BARBER.

Professor HONIE.

Assistant Professor TRIMBLE.

Doctor BREWSTER.

This department has charge of the examination of the water and food supplies for Kansas City, Kan. Therefore it adds to the study of the theory of hygienic measures the practical exemplification of some of the more important examinations and regulations.

1.—HYGIENE. Two hours, 1st term, Tuesday and Friday, at 10. Text-book recitations and laboratory exercises. Required of Seniors.

INTERNAL MEDICINE.

Professor SLOAN.
Clinical Professor E. W. SCHAUFFLER.
Professor HOXIE.
Professor MURPHY.
Professor WOLF.
Clinical Professor BRUEHL.
Clinical Professor STERRETT.
Associate Professor LUTZ.
Associate Professor WOOD.
Clinical Instructor LANING.
Clinical Instructor MILLER.
Clinical Instructor TALBOT.

The work of the department begins in the Sophomore year, when Professor Naismith shows the students the normal and abnormal in the development of the students in the University at Lawrence. The theoretical work of the Clinical Department is given by lectures in the Junior year. The practical work is given in the North End Dispensary and the City Hospital during the Junior year, and in the Bell, Bethany and St. Margaret's hospitals during the Senior year. Two exercises for each student (in a section of not more than ten students) are given weekly to the Juniors in physical diagnosis by Professors Murphy and Bruehl. One weekly clinic is given them by Professors Schauffler and Bruehl. In the Senior year they visit in sections of four students the bedsides in the three hospitals mentioned, and are taught by Professors Sterrett (at Bethany) and Hoxie (at the Bell), and Instructors Talbot and Miller (at St. Margaret's). Besides this, during the Senior year the class meets weekly for a conference on the reports of members who have studied assigned cases. The clinical microscopy is taught by Associate Professor Hall, of the Department of Clinical Pathology. Methods of life-insurance examination are taught by Doctor Porter and demonstrated by Professors Murphy and Bruehl. Pharmacology and therapeutics are taught by the faculty of this department, with the exception of the so-called physiological therapeutics, which are taught by Associate Professor Scott, Instructor Clark, and Demonstrator Payne, of that department. Dietetics is taught by Professor Wolf during the Senior year.

2.—DISEASES OF METABOLISM. One hour, 1st term, Wednesday, at 10. Required of third-year students. Lectures. Professor Murphy.

3.—DISEASES OF THE GASTRO-INTESTINAL TRACT. One hour, 1st term, Tuesday, at 10. Lectures. Required of third-year students. Professor Wolf.

4.—DISEASES OF THE CHEST. Two hours, 1st term, Monday and Friday, at 10. Lectures. Required of third-year students. Professor Sloan.

5.—INFECTIVE DISEASES. One hour, 1st term, Thursday, at 10. Lectures. Required of third-year students. Associate Professor Wood.

6.—RENAL AND "CONSTITUTIONAL" AFFECTIONS. One hour, 2d term, Wednesday, at 10. Required of third-year students. Associate Professor Lutz.

7.—CLINICAL INSTRUCTION in groups, with special reference to diagnosis. Two hours, 1st term. Two periods weekly. Required of third-year students. The divisions are uniform with those in other departments, and do not exceed ten students in each group. Professor Murphy, Clinical Professor Bruehl, and Instructor Laning.

8.—SAME. Two hours, 2d term. Required of third-year students.

9.—CITY HOSPITAL CLINIC. One hour, both terms, Saturday, at 8:30. Required of third-year students. Clinical Professors Schauffler and Bruehl.

10.—CLINICAL INSTRUCTION for sections of ten. Two hours, 1st term. For fourth-year students. This course is more general than those for Juniors, in that it pays greater attention to therapy and pathology. Professor Murphy and Clinical Professor Bruehl.

11.—SAME. For fourth-year students, 2d term. During this term, the technique of life-insurance examination is taught.

12.—WARD CLASSES. Attendance restricted to fourth-year students and to four students in a group, at St. Margaret's, Bethany, and the Bell hospitals. Credit, one hour for each day. Professors Wolf, Sterrett, Hoxie, Talbot, and Miller.

13.—DIAGNOSIS OF DISEASES OF THE ABDOMEN. One hour, fourth year, 2d term, Monday, at 11. Lectures. Elective. Associate Professor Wood.

14.—DIETETICS. Two hours, 1st term, Tuesday and Friday, at 9. Lectures. Required of Seniors. Professor Wolf.

15.—CLINICAL CONFERENCE. One hour, 1st term, Thursday, at 5. Required of Seniors. Professor Sloan.

16.—SAME. Continuation of course 15. Required of Seniors. Professor Sloan.

MEDICAL ECONOMICS.

HON. C. F. HUTCHINGS.
DR. DAVID R. PORTER.
DR. D. W. BASHAM.
DR. CLAY COBURN.
DR. F. M. DAILY.
DR. O. J. FURST.
DR. W. S. HARVEY.
DR. CHAS. S. HUFFMAN.
DR. M. F. JARRETT.
DR. R. A. LIGHT.
DR. B. F. MORGAN.
DR. R. J. MORTON.
DR. J. E. OLDHAM.
DR. M. C. PORTER.

This department of the Clinical School contemplates the instruction of the fourth-year students not only in the rights and privileges of the physician, but also in matters relating to expert testimony, malpractice, ethics, and medical organization. Toxicology is taught at Lawrence. *Post-mortem* examinations, their technique and legal status are considered by the department of clinical pathology. Life insurance, however, is a matter taught by this department.

One hour a week during the Senior year is devoted to the work of introducing to the student the standards and relations found in the world of practice. As indicated by the above list, the most successful men from the different parts of Kansas appear before the Seniors to indicate how important are right ideals and high standards. Before graduating each candidate must take a modified form of the Hippocratic oath.

1.—MEDICAL JURISPRUDENCE. One hour, 2d term, Thursday, at 3. Lectures. Required of fourth-year students. Mr. Hutchings.

2.—MEDICAL ECONOMICS. One-half hour, 1st term, Wednesday, at 3. Lectures. Required of fourth-year students. Special lecturers.

3.—LIFE INSURANCE. One-half hour, 1st term, Wednesday, at 3. Lectures and practical exercises. Required of four-year students. Doctor Porter.

NEUROLOGY AND PSYCHIATRY.

Professor HANAWALT.
Professor GLASSCOCK.
Adjunct Professor GODDARD.
Superintendent KUHN.

The work of this department is illustrated by clinics at the Grandview Sanitarium, as well as by clinics in the hospitals to which the students are regularly attached.

1.—PSYCHIATRY. Two hours, 1st term. Required of Seniors. Tuesday and Friday, at 11. Lectures. Adjunct Professor Goddard.

2.—PSYCHIATRY. One hour, 2d term, Saturday, at 9. Elective. Lectures. Only those who have had some instruction in psychiatry are admitted to this course. Doctor Kuhn.

3.—ORGANIC DISEASES OF THE NERVOUS SYSTEM. Two hours, 2d term, Monday and Friday, at 10. Lectures. Required of third-year students. Professor Hanawalt.

4.—THE NEUROSES. One hour, 2d term, Saturday, at 11. Lectures. Required of fourth-year students. Professor Glasscock.

5.—NEUROLOGICAL CLINICS. One hour, 1st term, Saturday, at 4. Required of fourth-year students. Professor Glasscock.

OBSTETRICS.

Professor MOSHER.
Associate Professor GUFFEY.
Clinical Instructor NASON.

This department is equipped with models, drawings and manikins sufficient to illustrate fully its instruction. Seven units of work are required, distributed over lectures and demonstrations; and the conduct of six births.

After the preliminary work of the first term of the Junior year, students are shown cases in the lying-in ward of the North End Dispensary, and of the Bell, South Side and Bethany Hospitals. Each student must attend and report six cases aside from those demonstrated by his instructors. For this work the student goes with his instructor to the home of the patient and carries out the delivery under the same conditions as obtain in actual practice. He is made responsible for at least two cases in hospital service. The report of each case must be very complete and accurate. In so vital a matter as the conduct of births, the University of Kansas believes that accuracy and suc-

cess can be obtained only by rigidity and fulness of requirement in the work of each student.

1.—PHYSIOLOGICAL OBSTETRICS. Three hours, 1st term, Tuesday, Wednesday, and Friday, at 4. This course embraces the physiology and management of pregnancy, labor, the puerperium, and of the new-born. Required of third-year students. Associate Professor Guffey.

2.—PATHOLOGICAL OBSTETRICS. Two hours, 2d term, Monday and Wednesday, at 11. This course embraces the pathology of pregnancy, labor, the puerperium, and of the new-born, also the treatment of these abnormal conditions. Required of third-year students. Professor Mosher.

3.—CLINICAL DEMONSTRATIONS. One hour, 2d term. The physiological, pathological and bacteriological changes incident to pregnancy, labor and the puerperium are demonstrated in this course. It combines laboratory and bedside instruction. Elective, by appointment. Associate Professor Guffey.

4.—MANIKIN DEMONSTRATIONS. One hour, both terms, Saturday, at 3. This includes demonstrations by the instructor with the manikin and foetus, and actual work on the same by the students under his guidance. Among the subjects taken up are the following: Presentation and position, mechanism of labor, technique of delivery, breech presentation, version and extraction, induction of premature labor, forceps, and perineal repair. Required of fourth-year students. In sections of ten. Associate Professor Guffey and Instructor Nason.

5.—CLINICAL OBSTETRICS. One hour, both terms. This course brings the student face to face with actual conditions met with from time to time in dispensary and hospital work. With the patient before him, the student is questioned regarding diagnosis, treatment and management, and where feasible, he does the actual work. This course combines operative and bedside instruction. It includes reports and discussion of all abnormal conditions met with in the out-patient department. Elective, by appointment. Professors Mosher, Guffey, and Instructor Nason.

6.—OUT-PATIENT DEPARTMENT. The management of six births, together with a detailed report of each, is required of every student before graduation. Associate Professor Guffey.

OPHTHALMOLOGY.

Professor THOMPSON.
Assistant Professor CURDY.
Assistant Professor LIDIKAY.
Assistant Professor LOOK.
Assistant Professor WEVER.
Clinical Instructor BELLOWES.

The work of this department is required for two hours of lectures for one semester, and for one clinic weekly for two semesters. Assistant Professor Lidikay shows an operative clinic at the Bell Hospital weekly. Professor Thompson with Assistant Professors Look and Wever demonstrate at the North End Dispensary the ambulatory patients of that neighborhood. Professor Thompson and Assistant Professor Curdy give the didactic work on ophthalmology. Assistant Professor Lidikay and Doctor Bellows demonstrate ophthalmological cases at St. Margaret's Hospital to the sections meeting there daily.

1.—THE ELEMENTS OF OPHTHALMOLOGY. Lectures. Two hours, 2d term, Tuesday and Friday, at 5. Required of third-year students. Assistant Professor Curdy.

2.—CLINICAL OPHTHALMOLOGY AND OTOLOGY. For groups of ten students. One hour, 1st term. Required of fourth-year students. Professor Thompson and assistants.

3.—SAME. Second term. Required of fourth-year students.

PATHOLOGY AND PATHOLOGICAL ANATOMY.

Professor BARBER.
Associate Professor HALL.
Associate Professor TRIMBLE.

The plan of this department is to have its students learn to do by doing. Their work is therefore entirely in the laboratory and morgue. Specimens are not demonstrated to students, but students are given raw material and expected to work it up (with the help of the instructors) and present complete reports (including drawings) on it. For this reason the department provides plenty of microtomes and other apparatus, a good working library, and an instructor constantly in the laboratory to help the students. Associate Professor Hall teaches the clinical microscopy (especially the hematology), which in some institutions is given to the department of internal medicine. Thus this department gives in a systematic way the laboratory work which will enable the student to check his deductions from physical signs and symptoms.

This department continues at Kansas City the work begun

by the department of bacteriology and pathology at Lawrence, and is regarded as the basic study of the clinical department. Therefore, the work is required during the whole Junior year and in the Senior year until clinical and microscopical diagnosis is completed.

Great stress is laid upon the ability to describe orally, in writing and by drawings the lesions and conditions found in the necropsies. Each student is expected to take part in conducting and recording four *post-mortem* examinations. He is expected to fix, stain and mount his own specimens. His note-books and protocols are used as a basis upon which to estimate the student's ability and industry.

1.—POST-MORTEM PATHOLOGY. Four hours. A laboratory course on Tuesday, Wednesday and Friday afternoons during the 1st term. This course will include *post-mortem* technique, gross pathology, morbid histology, and clinical bacteriology. Required of third-year students. Associate Professor Trimble.

2.—ADVANCED POST-MORTEM PATHOLOGY. Four hours. A continuation of course 1, on Tuesday and Saturday afternoons during the 2d term. Associate Professor Trimble.

3.—MICROSCOPICAL AND CLINICAL DIAGNOSIS. Four hours, 1st term, Monday and Saturday. A laboratory course. Two forenoons each week. Required of fourth-year students. Associate Professor Hall.

4.—SPECIAL TECHNIQUE. Three hours, 2d term, 10 to 12, Monday, Tuesday, and Friday. A laboratory course for advanced students. Elective. Associate Professor Hall.

PEDIATRICS.

Associate Professor WEISS.
Assistant Professor GOLDMAN.
Assistant Professor HUNT.

The work of this department begins in the second half of the Junior year and continues through the Senior year. There has been an abundance of ambulant material at the North End Dispensary, and the instructors take the students to the bedside of those patients too ill to come to the dispensary.

1.—DIDACTIC PEDIATRICS. One hour, 2d term, Saturday, at 3.
(a) The normal development of the infant and child. The contrast is drawn between the findings in the healthy infant and those in the diseased child, and also those in the healthy and diseased adult. This inculcates the essentials of diagnosis. (b)

The history and logic of infant feeding. Required of Juniors. Associate Professor Weiss.

2.—CLINICAL PEDIATRICS. One hour, 1st term. Limited to sections not exceeding seven students. The object of courses 2 and 3 is, first, to bring each student into personal contact with the patients under the care of the department, and second, to stimulate each student to positive effort in the line of individual investigation. At the dispensary hours. Required of Seniors. Professors Weiss, Goldman and Hunt.

3.—SAME. One hour, 2d term. Required of Seniors. Professors Weiss, Goldman and Hunt.

RHINOLARYNGOLOGY.

Professor SAWTELL.
Associate Professor FOSTER.
Assistant Professor LIDIKAY.
Assistant Professor LOOK.
Assistant Professor WEVER.

The work of this department is begun during the third year, in the second term, and is continued through the first term of the fourth year. Both the didactic and clinical work is given in the dispensaries. For the advanced student and specialist, Doctor Foster's work at St. Margaret's will prove especially instructive. This is given regularly to fourth-year students in the ward classes.

1.—CLINICAL INSTRUCTION. One hour, 2d term. Required of third-year students. This work is given to groups, not exceeding ten in number, who are taught the anatomy and pathology of the parts and the technique of examination and treatment. Professor Sawtell.

2.—SAME. One hour, 1st term. Required of fourth-year students. Professor Sawtell.

3.—DISEASES AND INJURIES OF THE EAR. Lectures. One hour, 1st term, Monday, at 5. Required of Seniors. Assistant Professor Look.

SURGERY.

Professor BINNIE.
Professor BLOCK.
Professor PERKINS.
Clinical Professor GRAY.
Clinical Professor GRIFFITH.
Clinical Professor HUGHES.
Clinical Professor FRICK.
Clinical Professor HAMEL.
Clinical Professor BLAIR.
Associate Professor ROBINSON.
Associate Professor SCHAUFFLER.
Doctor SHELDON.
Doctor ROGERS.
Doctor POORMAN.

General surgery is taught at Lawrence. In Kansas City the theory of surgical procedure is given in the Junior year. The Juniors are shown clinics in minor surgery in the North End Dispensary, and in major surgery at the General City Hospital. The Seniors visit St. Margaret's Hospital in sections of four daily for four weeks during the first semester, and once a week during the second semester. They have one forenoon of amphitheater clinics in St. Joseph's Hospital, and two forenoons of sectional clinics in Bethany Hospital, and one in the Wesley Hospital. Operative surgery is taught in the laboratory on the cadaver and animals. The amount of surgery presented the student is so abundant that the students can hardly fail to be well-grounded in that art.

1.—REGIONAL SURGERY. Lectures. Four hours, 1st term, Monday, Tuesday, Wednesday, and Thursday, at 9. Required of third-year students. Professor Binnie, with Associate Professors Robinson and Schauffler.

2.—GENITO-URINARY SURGERY. Lectures. One hour, both terms, Friday, at 9. Required of third-year students. Professor Block.

3.—CLINICAL SURGERY. One hour, both terms. Required of third-year students. Saturday, at 10, at the General (City) Hospital. Clinical Professor Griffith.

4.—CLINICAL SURGERY. One hour, both terms. Required of third-year students. Monday, at 3, or Thursday, at 1, at the North End Dispensary. Professors Binnie and Blair.

5.—CRANIAL SURGERY. One hour, 2d term, Monday, at 9. Required of third-year students. Professor Binnie.

6.—ORTHOPEDIC SURGERY. Lectures and demonstrations. Two

hours, Saturday, from 3 to 6. Required of third-year students. Associate Professor Schauffler.

7.—SURGICAL DIAGNOSIS. Lectures and demonstrations. One hour, both terms. Required of fourth-year students. Friday, at 8. Professor Perkins.

8.—CLINICAL SURGERY. Sectional clinics at St. Joseph's, Bethany, Wesley and Bell hospitals. Both terms, credit one and one-half hours for each day, Wednesday or Thursday, from 9 to 12. Professors Binnie, Griffith, Hughes, Frick, Robinson, and Schauffler.

9.—WARD CLASSES at St. Margaret's, the Missouri Pacific, Bethany, and the Eleanor Taylor Bell Memorial hospitals. Credit, one hour for each nine forenoons. One hour each term required of fourth-year students. Professors Gray, Perkins, Hamel, Hughes, and Binnie.

10.—OPERATIVE TECHNIQUE. Laboratory. One hour, both terms. Saturday, at 9. Associate Professors Robinson and Schauffler.

11.—RECTAL SURGERY. Lectures and demonstrations. One hour, 1st term, Wednesday, at 3. Required of fourth-year students. Assistant Professor Roberts.

12.—SURGICAL ANATOMY. Lectures and quizzes. One hour, second term. Elective. Tuesday, at 9. Doctor Sheldon.

THERAPEUTICS.

Associate Professor SCOTT.

Professor HOXIE.

Assistant Professor CLARK.

Demonstrator PAYNE.

This is a subdivision of the department of internal medicine, and teaches the application of pharmacological and mechanical agents to the treatment of the sick. The following courses are offered:

1.—THERAPEUTICS. Lectures and text-book recitations. Two hours, 1st term, Tuesday and Thursday, at 11. Professor Hoxie.

5.—THERAPEUTICS. Lectures. Two hours, 2d term, Monday and Friday, at 11. Required of third-year students. Professor Hoxie.

6.—SUMMARY OF THERAPEUTICS. Lectures. One hour, 1st term, Saturday, at 10. Elective. Doctor Longenecker.

7.—ELECTROTHERAPY. Sectional clinics. 1st term. Elective. Credit, one hour. Professors Scott and Clark.

8.—ELECTROTHERAPEUTICS. Lectures. One hour, 2d term, Friday, at 11. Required of fourth-year students. Associate Professor Scott.

9.—MASSAGE AND HYDROTHERAPY. Practical exercises. One hour, both terms. One hour required of Seniors. Tuesday or Friday, at 3. Demonstrator Payne.

TRAINING SCHOOL FOR NURSES.

FACULTY.

FRANK STRONG, Ph. D., President.

GEORGE HOWARD HOXIE, A. M., M. D., Dean of the Clinical Department of the School of Medicine, and Lecturer on Medicine.

PEARL L. LAPTAD, Principal, and Lecturer on Nursing.

ROBERT MCEWEN SCHAUFFLER, A. B., M. D., Lecturer on Surgery.

WILLIAM KIRK TRIMBLE, M. D., Lecturer on Pathology.

JESSE E. HUNT, M. D., Lecturer on Physiology.

OSCAR M. LONGENECKER, M. D., Lecturer on Materia Medica.

CHARLES C. PAYNE, M. D., Lecturer on Anatomy, Massage, and Hydrotherapy.

J. HALCOMB LANING, M. D., Lecturer on Dietetics.

FRANK H. WEISS, Ph. G., M. D., Lecturer on Pediatrics.

DON CARLOS GUFFEY, A. B., M. D., Lecturer on Obstetrics.

ANITA M. PUGH, Matron of the Hospital.

HISTORY.

This school was established in July, 1906, coincident with the establishment of the Eleanor Taylor Bell Memorial Hospital. It therefore is a subdepartment of the School of Medicine of the University of Kansas, and as such is subject to the general oversight of the Dean of the Clinical Department.

EQUIPMENT.

The present hospital building contains thirty-six beds. The hospital is provided both with an operating-room for surgical work and with a hydrotherapeutic department for medical work. It therefore shows a greater variety of work than does the ordinary hospital of its size. Moreover, since it is a teaching hospital, the character of the work shown is much more instructive than that shown ordinarily in a private hospital. The nurses are given also dispensary service in the emergency hospital (twelve beds) in the North End of Kansas City, Mo.

The nurses live in a separate house and therefore have an

opportunity for study and rest away from the hospital atmosphere and cares.

Furthermore, the close proximity of the laboratory, library, and other equipment of the School of Medicine affords to the pupil nurses a great advantage in the way of medical information and scientific advancement.

ADMISSION.

Women of good character between the ages of twenty and thirty are eligible for admission. Those with a high-school education are given preference. Those who are accepted are accepted with the understanding that they must spend a probationary period of three months in the school, during which time they will receive board, laundry and lodging, but no other compensation.

The didactic instruction begins October 1 and ends June 1 of each year, but students are admitted at any time when there is a vacancy.

Any young woman who wishes to enter the school must make formal application (on blanks provided for that purpose) to the faculty of the training school. With this application should be sent letters showing what educational advantages she has enjoyed, testifying to her good moral character, and to her good health. These letters should preferably be from her instructor, her pastor and her medical attendant.

ADVANCED STANDING.

Candidates for advanced standing must satisfy the requirements for admission and also show that they have had the work already done by the class to which they wish admission. There will be required of them, as of beginners, a probationary period, and they will be required to pass an examination on the work for which they seek credit.

COURSE OF STUDY.

The course is for three years of at least forty-eight weeks each. (It is usual to grant the members of the first- and second-year classes a vacation of three weeks each year, and of the third-year class four weeks.)

The instruction consists of two parts—the practical and the theoretical. The practical work consists of sixty hours' work each week. The theoretical instruction requires six hours of lectures or recitations each week. This theoretical instruction

includes the necessary work in anatomy, physiology, hygiene, medicine, pediatrics, obstetrics, etc.

PROMOTION.

Students are advanced from one class to another upon the obtaining of satisfactory grades in their practical work and upon their passing satisfactory examinations in their didactic work. Reports on the practical work are made monthly and those on the didactic work semiannually.

GRADUATION.

At the close of a successful course of three years the students are granted a diploma under the seal of the University of Kansas. Before, however, they receive such a diploma, they must make up lost time and demerits charged against them during the course.

EXPENSES.

Each nurse must furnish her own uniform, books and instruments.* In return each member of the Junior class is allowed \$8 a month, of the middle class, \$10 a month, and of the Senior class, \$15 a month. From this compensation is deducted, of course, the cost of all material unnecessarily broken or lost. Since the board, lodging and necessary laundry work are furnished free, the candidate for a diploma meets very little expense.

*These instruments consist of 1 hypodermic syringe (all metal), 1 bandage scissors, 1 small scissors, 1 grooved director, 1 clinical thermometer, 1 probe, 1 thumb forceps.

OUTLINE OF COURSE OF STUDY.

The following outline serves as a basis for the theoretic or didactic studies:

FIRST YEAR.

Anatomy.

1. Topographical and regional anatomy.
2. Tissues: Physical and chemical constitution; classification.
3. Framework: Morphology of bones and muscles.
4. Systems of organs: Digestive; respiratory; glandular; genito-urinary; nervous.

Chemistry.

Outlines of general chemistry and physics.

Materia Medica.

1. Forms and properties of the mainly used drugs.
2. Dispensing.
3. Methods of administering drugs.

Physiology.

1. Properties of tissues (irritability, etc.).
2. Nutrition and waste.
3. Nervous reactions.

Pathology.

1. Principles of wound healing.
2. Bacteriology and immunity.

Hygiene.

1. Personal: Exercise; dress; cleanliness.
2. Domestic: Ventilation; heating; light; cleanliness, etc.

Dietetics.

1. General principles of feeding in health and disease.
2. Classification of foods.
3. Care and preservation of foods.
4. Methods of cooking.

Hydrotherapy.

1. General principles.
2. The use of apparatus.

Massage.

1. Technique of the various movements.
2. Application to the diseased body.

Nursing.

1. Bed-making.
2. Care of rooms.
3. Care of instruments and utensils.
4. Care of patient's person.
5. Record-making.

SECOND YEAR.

Physiology.

1. Digestion.
2. Heat production and dissipation.
3. Urinalysis.
4. Fecal examinations.

Hygiene.

1. The prevention of diseases, especially the transmissible.
2. House and municipal sewage, etc.

Dietetics.

1. Diet in consumption.
2. Diet in nervous disorders.
3. Diet in surgical diseases.
4. Arrangement of dietaries.

Hydrotherapy.

Special applications: Technique.

Massage.

1. Limitations of application.
2. Interpretation of prescriptions.

Nursing.

1. Care of emergency patients.
2. Care of convalescents.
3. Examining-room nursing.

Surgery.

1. Methods of sterilization.
2. Asepsis and antisepsis.
3. Anesthesia.
4. Bandaging.

Materia Medica.

1. Practice in dispensing.
2. Toxicology.
3. Pharmacognosy.

THIRD YEAR.

Dietetics.

1. Diet in digestive disorders.
2. Diet in circulatory and renal disorders.
3. Diet in skin disorders.
4. Diet in obesity.

Obstetrics.

1. Care of the pregnant and parturient woman.
2. Embryology and the physiology of pregnancy and labor.
3. Aspects in the lying-in room.

Surgery.

1. Care of instruments.
2. Dressings.
3. Methods of attendance at the operating table.
4. Methods in anesthetics.

Pathology.

1. Causation of disease.
2. Hematology.
3. *Post-mortems* and their significance.

Medicine.

1. The fevers.
2. Transmissible diseases.
3. Renal and cardiac diseases.
4. Skin and venereal diseases.

Pediatrics.

1. The care and feeding of infants.
2. Eruptive diseases.
3. Care of teeth, hair, skin, etc.
4. Training of children.

Nursing.

1. The nervous.
2. The insane.
3. Eye and ear cases.

VIII. THE SUMMER SESSION.

FACULTY.

- FRANK STRONG, Ph. D., Chancellor, and President of the Faculty.
ARTHUR T. WALKER, Ph. D., Director of the Summer Session,
and Professor of Latin Language and Literature.
EPHRAIM MILLER, Ph. D., Professor of Mathematics and As-
tronomy.
JAMES W. GREEN, A. M., Professor of Law.
CHARLES G. DUNLAP, Litt. D., Professor of English Literature.
EDWIN MORTIMER HOPKINS, Ph. D., Professor of Rhetoric and
English Language.
WILLIAM C. STEVENS, M. S., Professor of Botany.
ARVIN S. OLIN, A. M., Professor of Education.
EUGENIE GALLOO, A. M., Professor of Romance Languages and
Literatures.
CHARLES S. SKILTON, A. B., Professor of Musical Theory and
Organ.
CHARLES E. HUBACH, Professor of Voice.
JOHN E. BOODIN, Ph. D., Professor of Philosophy.
IDA H. HYDE, Ph. D., Professor of Physiology.
HENRY B. NEWSON, Ph. D., Professor of Mathematics.
JAMES NAISMITH, M. C., Professor of Physical Education.
SAMUEL J. HUNTER, A. M., Professor of Entomology.
WILLIAM E. HIGGINS, LL. B., Professor of Law.
CLARENCE E. MCCLUNG, Ph. D., Professor of Zoölogy.
ANDREW P. SOLANDT, A. B., Professor of French Language and
Literature, Fairmount College.
PETER H. PEARSON, L. H. D., Professor of English Language and
Literature, Bethany College.
JOHN A. CLEMENT, A. M., Professor of Pedagogy and History,
McPherson College.
SCOTT HOLLAND GOODNIGHT, Ph. D., Assistant Professor of Ger-
man, University of Wisconsin.
MILES W. STERLING, A. M., Associate Professor of Greek.
HANNAH OLIVER, A. M., Associate Professor of Latin.
ELMER F. ENGEL, A. M., Associate Professor of German.
HAMILTON P. CADY, Ph. D., Associate Professor of Chemistry.
MARTIN E. RICE, M. S., Associate Professor of Physics and Elec-
trical Engineering.

- CARL L. BECKER, Ph. D., Associate Professor European History.
- FRANK E. WARD, Superintendent of Fowler Shops and Shop Instruction.
- DAVID F. MCFARLAND, M. S., Professor of Chemistry.
- ARTHUR J. BOYNTON, A. M., Assistant Professor of Sociology and Economics.
- FRANCIS W. BUSHONG, S. D., Assistant Professor of Chemistry.
- HERBERT W. EMERSON, B. S., Assistant Professor of Pharmacy.
- FRANK G. BATES, Ph. D., Assistant Professor of American History and Political Science.
- CLARENCE C. CRAWFORD, Ph. D., Assistant Professor of European History.
- FRANK E. JONES, Assistant Professor of Carpentry and Pattern-making.
- HENRY L. JACKSON, B. S., Assistant Professor of Chemistry, in Charge of Foods.
- JAMES E. TODD, A. M., Assistant Professor of Geology and Mineralogy.
- GEORGE W. HANSON, Forge and Foundry Instructor.
- ULYSSES G. MITCHELL, A. M., Instructor in Mathematics.
- HELEN PHIPPS, Instructor in Violin.
- MAUDE B. COOKE, Assistant Instructor in Piano.
- JULIA RIGHTER, Mus. B., Assistant Instructor in Piano.
- LOUISE WIEDEMANN, Mus. B., Assistant Instructor in Piano.
- AUGUSTA FLINTOM, Assistant Instructor in Voice.
- LARRY M. PEACE, A. B., Preparator and Demonstrator in the Botanical Laboratory.

PURPOSES OF SUMMER SESSION.

In accordance with a general desire to increase the usefulness of the University and bring its resources nearer to the people of the state, the Summer Session was established to meet the demands of the following classes:

1. *City and county superintendents, principals, and teachers*, especially those having work of high-school grade, to enable them to review their work, to become familiar with the latest and best methods, and thus prepare to do their own work better. Every department of the University in which entrance credits are accepted offers one or more courses intended to assist high-school teachers of that subject. If teachers do not find such courses as they need, the University will be grateful for suggestions.

2. *Instructors in other colleges* who may wish the opportunity of further study, of observing the work in their subject as pursued at the University of Kansas, and of using the laboratories and library of the University.

3. *Students preparing to enter the University*, to enable them to complete their preparation. No special classes are conducted for such students, but entrance credits may be secured in elementary chemistry, German, or zoölogy, second-year French, preparatory Latin composition, or advanced algebra.

4. *University students*, whether already matriculated or coming for the first time into membership in the University, to enable them to correct irregularities in their standing or to attain standing in the University. Almost all the courses are open to such students.

5. *Graduate students*, especially such as have already completed a portion of their work for the second degree and are prevented by regular employment from attending the University during other sessions. No course is open for graduate credit unless its description so states. Attention is invited to the new provision by which such an amount of *in absentia* work is permitted that the degree of Master of Arts may be secured by residence in three Summer Sessions. (See "Graduate Work.")

6. *Law students* who desire to reduce the time of their course from three years to two.

7. *Artisans*, to whom a few practical courses are now offered in Fowler Shops, and more will be offered in the future.

ADMISSION TO SUMMER SESSION.

The classes of the Summer Session are open to all who can satisfy the instructors that their preparation is sufficient to enable them to do the work properly; that is, a student may register in the Summer Session and attend its classes without meeting the requirements for admission which are in force during the regular sessions. But University credit is given only to those who are regularly matriculated in the University. A record is kept of the work of those who are not matriculated, and if they matriculate in the future they will receive credit for their work in the Summer Session.

REGISTRATION.

The days of registration for the session of 1908 are Monday, Tuesday, Thursday, Friday, Saturday, and Monday, June 8, 9, 11, 12, 13, and 15. After June 15 no registration for full credit

will be allowed except by previous arrangement with the Director. Since the Summer Session is short at best, it is strongly urged that all students be present on the opening day, June 11. On that day it is expected that classroom exercises will begin in all courses. Regular classroom exercises will be held on Friday, June 12, and also on Saturday, June 13, but on no other Saturday of the session.

On the first Monday or Tuesday of the session instructors will receive from the office lists of the students enrolled in their classes. Students whose names do not appear on those lists will not be considered members of the classes until they have registered.

LATE REGISTRATION.

Those who enter later than June 15 will be allowed to register for credit, but not for the full amount, because they will have to make good what they have lost during the early days of the session. But teachers whose duties prevent their entering at the beginning of the session are invited to correspond with the Director in advance. In such cases arrangements can sometimes be made by which nearly the full credit can be given. This can be done only by previous arrangement.

FEES AND EXPENSES.

The fee for Kansas students for the Summer Session will be ten dollars, for non-residents fifteen dollars, which will cover admission to all courses excepting those in music. These fees are established by the legislature, and cover only a small part of the expense of teaching each student; therefore no deviation from them can be made, whether the student is in residence one week or nine. For certain laboratory courses there will be, in addition, the cost of materials.

The regular University matriculation fee is five dollars, payable but once. Students in the Summer Session are not required to pay this fee, but will be required to do so if they afterwards attend the regular sessions of the University.

Lawrence is well provided with boarding-houses and restaurants, and a sufficient number of these will continue in operation to supply all demands of the Summer Session. Good board, including room and service, may be had in private families at from \$4 to \$6 per week. Some of the student boarding clubs will continue operations during the session.

A list of rooms and boarding-places is prepared, and students can obtain information from the Registrar.

LENGTH OF THE SESSION.

Unfortunately no fund is available for 1908 from which an unexpected demand for a longer Summer Session can be met adequately. It has seemed best to do at once what can be done. Therefore the six-weeks session remains unchanged, but a few three-weeks courses are offered, which will follow that session, lasting from July 23 to August 12. Each of these courses will articulate as closely as possible with one or more of the preceding courses, and at the same time will be an independent course which may be elected by any properly qualified student. Each course will demand the full time of the students electing it. With one or two exceptions, each will give a three-hours credit. Students who take advantage of these courses may thus receive a maximum of nine hours credit for their nine weeks' work—just half the maximum credit allowed for the eighteen weeks of the regular sessions.

These supplementary courses are offered in Biology (see Zoölogy), Chemistry, Education, English Literature, German, European History, and Mathematics. It is possible that a few others may be organized in June if the demand warrants them, but this cannot be promised.

In the future it will be the policy of the University to satisfy those who desire a longer session more completely than can be done this year.

AMOUNT OF WORK.

The normal amount of credit to be obtained in the six-weeks session is five hours; the maximum is six hours. Under no circumstances will registration for more than six hours credit be permitted in this session. The amount of credit given for each course is indicated in the statement of that course. As there are no one-hour courses, a student who wishes credit may enroll in no more than

One five-hour course, or

One three-hour and one two-hour course, or

Two three-hour courses, or

Three two-hour courses.

Students who do not enroll for credit will be registered for no more work than others, but written permission may be given them to attend one other class as regular visitors. It is believed, however, that even those who do not desire credit will be most benefited by their summer's work if they confine themselves to the work for which they are enrolled.

No student may enroll in more than one of the supplementary three-weeks courses. The credit in most of these courses is three hours; in others, two hours.

NATURE OF COURSES.

The courses offered in the Summer Session are for the most part courses which are offered in the regular sessions, or modifications of such courses. Most of the courses have been selected with a view to meeting the wishes of teachers, and many of them have been modified in some details for the same purpose. But such modifications are not so great as to make the courses unsuitable for students who do not intend to teach; nor do they lower the grade of the work.

Regular students of the University must be on their guard against duplicating work. Some of the Summer Session courses, while not exactly equivalent to regular courses, are so nearly equivalent to them that credit will not be given for both. In such cases a warning is given in the statement of the course by the words, "This course will be regarded as a duplicate of —." Students who have had the regular course may not take for credit the Summer Session course. Students who take the Summer Session course will be barred in the future from the regular course.

COURSES OFFERED CONDITIONALLY.

While most of the courses listed in this catalogue are offered unconditionally, a few are offered only on condition that the demand warrants them. In each case this is indicated in the statement of the course. Not quite all of the courses which are offered conditionally can be given. Probably those which have a sufficient number of registered students by Friday night, June 12, will be regarded as established, and the rest will be removed from the list of possibilities. In deciding on the courses to be retained, no student will be counted unless his fees are paid and he is regularly registered. Fees will be returned if the class is not given and the applicant wishes to enter no other class. Students who intend to elect any of these courses are requested to notify either the instructor or the Director in advance.

GRADUATE WORK.

Graduates of the University of Kansas, or of other institutions of good rank, find in the Summer Session an opportunity to do graduate work which will lead to the degree of Master of

Arts. This degree is conferred on the successful completion of thirty hours of graduate work and a thesis. The selection of all courses and of a subject for a thesis must be sanctioned in advance by the Dean of the Graduate School and the head of the department in which the applicant elects to do his major work.

Heretofore the rules have required that all this work be done in residence, so that five Summer Sessions were required to secure the degree. A modification of the rules has now been made, providing that, with the consent of the department concerned, a student who has done graduate work in any Summer Session may do a limited amount of *in absentia* work before attending another Summer Session. This new rule makes it possible to secure the degree of Master of Arts by working in three Summer Sessions and doing the rest of the required work *in absentia*.

This privilege will be granted only after the applicant has done some work in residence, and only to such applicants as have proper library or laboratory facilities for doing graduate work *in absentia*. One who desires to take advantage of the privilege may write to the head of the department in which he intends to do most of his work, stating his qualifications for graduate work and his facilities for doing it *in absentia*. The head of the department can make no absolute promise unless the applicant has done some residence work with him, but he can indicate his probable decision.

In some departments instructors are willing to conduct graduate courses in addition to the courses announced in this catalogue. Those who desire such courses may be advised to write to the head of the department.

Students desiring graduate credit for summer work should register with the Dean of the Graduate School, as well as with the Director of the Summer Session.

LECTURES.

At five o'clock of every working-day of the Summer Session there will be a lecture, open to both the student body and the general public. Some of these lectures will be given by scholars from other universities; the remainder will be by members of the University Faculty.

LIST OF COURSES.

The Summer Session courses offered by each department are numbered consecutively with Roman numerals. Arabic numerals refer to the courses as numbered in the General Catalogue for 1906-'07. For example, I (=2) means that course I of *this* catalogue is identical with course 2 of the General Catalogue. I (nearly=2) means that course I of *this* catalogue is a modification (generally a condensation) of course 2 of the General Catalogue.

Unless the contrary is distinctly stated, each of the following courses will be given, no matter how few students elect it.

All classes meet five days a week, Monday to Friday, and also on Saturday, June 13.

BOTANY.

I.—METHODS IN BIOLOGICAL INSTRUCTION. Three hours credit.

II.—ANATOMY OF PLANTS. Three hours credit.

III.—THE ORIGIN AND IMPROVEMENT OF DOMESTICATED PLANTS. Two hours credit.

IV.—Opportunities will be offered graduate students to carry on advanced work in lines for which they are prepared and for which the department is equipped; but specific courses cannot be counted on except after correspondence.

CHEMISTRY.

Since the following courses involve laboratory work, the student will be obliged to procure a coupon book at the office of the Secretary, and coupons will be removed from this from time to time to cover the expenses of the course. The apparatus needed will be loaned the students without expense, but they are required to pay for apparatus actually broken, destroyed, or used up.

I (=1).—ELEMENTARY CHEMISTRY. Five hours credit.

II (=2).—INORGANIC CHEMISTRY. Four or five hours credit.

III (=3).—QUALITATIVE ANALYSIS. Five hours credit.

IV (=5).—SANITARY AND APPLIED CHEMISTRY. Two hours credit.

V (=8).—QUANTITATIVE ANALYSIS. Three, four, or five hours credit.

VI.—TEACHERS' COURSE IN GENERAL CHEMISTRY. Two hours credit.

Supplementary Courses, July 23 to August 12.

VII (=6).—THE CHEMISTRY AND PHYSIOLOGY OF FOODS. Three hours credit.

VIII.—QUANTITATIVE ANALYSIS. One, two, or three hours credit.

IX.—The chemical laboratories offer facilities for research work in analytical, physical and organic chemistry to graduates of this or other institutions who are prepared to do such work. The courses will be accepted for credit in the Graduate School. Students who contemplate work of this character should make arrangements with the chemistry department before coming to the University.

PHYSIOLOGICAL CHEMISTRY and DRUG ANALYSIS. For courses in these subjects, see Pharmacy.

EDUCATION.

I (nearly=12).—THE SECONDARY SCHOOL. Two hours credit.

II (nearly=9).—COMPARATIVE STUDY OF EDUCATIONAL SYSTEMS. Two hours credit.

III.—The facilities and equipment of the department are available for the use of graduate students in carrying on lines of investigation for which they are prepared. But definite arrangements for such work should be made before the beginning of the Summer Session.

ENGLISH LANGUAGE.

I (nearly=28).—METHODS OF TEACHING ENGLISH. Two hours credit.

II (=29).—ELEMENTARY OLD AND MIDDLE ENGLISH. Two hours credit.

ENGLISH LITERATURE.

I (nearly=15).—ENGLISH LITERATURE OF THE NINETEENTH CENTURY. PROSE. Two hours credit.

II (nearly=19).—THE ENGLISH NOVEL. Two hours credit.

Supplementary Course, July 23 to August 12.

III (=8).—SHAKSPERE. Three hours credit.

ENTOMOLOGY.

It is not the purpose of the department to repeat in the summer the regular winter courses, but rather to offer such work as can be conducted profitably only in the summer months. Accordingly, special attention will be given to the study of the living forms, and the work will be conducted in part as an outdoor study. Those who desire University credit for these courses must already have had zoölogy I.

I.—FIELD ENTOMOLOGY. Three or five hours credit.

II (nearly=7).—OUTDOOR STUDIES FOR TEACHERS. Two hours credit.

III.—LABORATORY METHODS AND PREPARATION OF ILLUSTRATIVE CABINETS. Three hours credit.

IV.—RESEARCH STUDENTS and students prepared to do advanced work will be afforded the privileges of the laboratories and the library. It will be advisable, however, for such to arrange for this work beforehand, either in person or by correspondence.

FRENCH.

I (=2).—ELEMENTARY FRENCH II. Five hours credit.

II (=3).—MODERN FRENCH PROSE. Three hours credit.

III (=4).—COMPOSITION. Two hours credit.

IV.—In addition to these courses an opportunity will be given for more advanced work, the choice of the course to be determined by the preparation of those applying for it.

GEOLOGY.

I.—PHYSICAL GEOGRAPHY. Five hours credit. This course is intended to prepare teachers for teaching this science in the high schools of Kansas; consequently the outline published in the University of Kansas High-school Manual, IV, will be followed. The outline therein given will be followed as a text, and copies of the same may be had at the University by students who enroll in the class.

II (=6).—PHYSIOGRAPHY. Three hours credit.

III.—LABORATORY COURSE IN PHYSICAL GEOGRAPHY. Two hours credit.

GERMAN.

I (=1).—BEGINNING GERMAN. Five hours credit.

II (nearly=20).—TEACHERS' COURSE. Two or four hours credit.

III.—LESSING AS DRAMATIST. Four hours credit.

Supplementary Course, July 23 to August 12.

IV.—PROBLEMS IN GRAMMAR AND COMPOSITION. Three hours credit.

GREEK.

I (=1).—ELEMENTARY GREEK. (*Not given for less than six students.*) Five hours credit.

AMERICAN HISTORY AND GOVERNMENT.

I.—AMERICAN GOVERNMENT. Two hours credit.

II.—THE CONFEDERATION AND THE CONSTITUTION. Two hours credit.

EUROPEAN HISTORY.

I (nearly=5).—MEDIÆVAL HISTORY. Two hours credit.

II (nearly=8).—HISTORY OF EUROPE FROM 1600. Two hours credit.

Supplementary Course, July 23 to August 12.

III (nearly=20).—RENAISSANCE AND REFORMATION. Two or three hours credit.

LATIN.

I (nearly=1).—GRAMMAR AND PROSE COMPOSITION.

II (=11 and part of 20).—ROMAN PRIVATE LIFE, AND AN OUTLINE OF THE TOPOGRAPHY AND MONUMENTS OF ROME. Two hours credit.

III.—TEACHERS' COURSE IN LATIN GRAMMAR. (*Not given for less than six students.*) Two hours credit.

IV.—Graduate work in Cæsar or Vergil will be conducted if properly prepared students apply for it. The library is excellently equipped for graduate work in these lines.

LAW.

The courses in law in the Summer Session are designed to assist those who do not have the requisite credits in law to entitle them to enroll regularly in either the Middle or Senior classes of the School of Law, or who desire to shorten the actual

time required to complete the three-year course of study. A course has been arranged which will enable a person who enrolls in the Summer Session of 1908 to graduate after attending two Summer and two regular sessions of the University, providing he has previously completed the preparatory work required for entrance to the Law School, as laid down elsewhere in this catalogue.

The following courses will be given during the Summer Session of 1908:

I.—CRIMINAL LAW.

II.—TORTS.

III.—BILLS AND NOTES.

IV.—AGENCY.

Any one of the above may be taken by the student, upon satisfying the instructor of his preparation to undertake the work. It is intended, however, that those who wish to complete the course in the School of Law in two Summer and two regular sessions shall study criminal law and torts in the first Summer Session and agency and bills and notes in the second Summer Session. During the regular sessions the student will pursue the course of study in an order which will be made known to him upon application.

MATHEMATICS.

I (=2).—COLLEGE ALGEBRA. Three hours credit.

II (=4).—ANALYTIC GEOMETRY I. Two hours credit.

III. (=5).—CALCULUS I. Three hours credit.

A TEACHERS' COURSE IN MATHEMATICS.

The last few years have witnessed a remarkable revival in this country and abroad of interest in the teaching of mathematics and in the question of its proper place in the curriculum of the schools. In all sections of the country teachers' associations and other interested people are eagerly discussing questions of mathematical reform in the grammar grades and high school. Special organizations have been formed in many parts of the country to deal with these questions, and a special journal has been founded to furnish a suitable forum for such discussions.

There is already a wide-spread interest in this movement among Kansas teachers, and many of them are desirous of knowing for themselves more of the relative merits and de-

merits of the present system as well as the character and extent of the proposed changes. To meet the wants of this large body of teachers the following course is offered at the Summer Session:

IV (=18).—TEACHERS' COURSE IN MATHEMATICS. Two hours credit.

Supplementary Course, July 23 to August 12.

V.—PLANE TRIGONOMETRY. (*Not given for less than six students.*) Two hours credit.

MECHANICAL DRAWING.

I (=1 and 2).—ELEMENTARY MECHANICAL DRAWING. Three hours credit in the School of Engineering; but registered as a two-hour course, so that students may take four hours in addition to it.

MUSIC.

The department of music will offer courses in piano under Professor Skilton and assistants, in organ and theory under Professor Skilton, in voice under Professor Hubach and assistants, and in violin under Miss Phipps, thus presenting as wide a field of study as the regular course.

Students in music do not pay the regular Summer Session fee, but according to the following schedule:

Private lessons with Professor Skilton or Professor Hubach:

One lesson a week..... \$10 00

Two lessons a week..... 18 00

Private lessons in violin:

One lesson a week..... \$8 00

Two lessons a week..... 15 00

Theory class, three hours a week..... 10 00

Ensemble class, one hour a week..... 2 00

Private lessons with assistants in piano:

One lesson a week..... \$4 50

Two lessons a week..... 9 00

Private lessons with assistant in voice:

One lesson a week..... \$6 00

Two lessons a week..... 12 00

No charge is made for the use of the University organ. Organs in city churches may be used at the rate of one dollar a week for an hour of daily practice. Pianos may be rented at private houses or of the music dealers. The University does

not furnish pianos for practice, excepting a piano with organ pedals.

PHARMACY.

Neither course will be given unless the total number of students electing both is at least six.

I (=6 and 11).—PHARMACEUTICAL TESTING AND DRUG ANALYSIS. Five hours credit.

II (=8).—PHYSIOLOGICAL AND MEDICAL CHEMISTRY. Five hours credit.

PHYSICAL EDUCATION.

I (nearly=6).—TEACHERS' COURSE. Two hours credit.

II (nearly=8).—GAMES FOR SCHOOL CHILDREN. Two hours credit.

III.—A course in swimming will be introduced this summer. No credit. The class will consist of two sections for women and two for men.

PHYSICS.

I (=1).—ELEMENTARY PHYSICS. Five hours credit. Given in 1908.

II (=2).—ELEMENTARY PHYSICS. Five hours credit. Given in 1909.

III.—LABORATORY WORK.

IV.—TEACHERS' COURSE IN PHYSICS.

V.—ADVANCED COURSES. An opportunity will be given students to do some advanced work in physics where such work can be done largely by reading and individual laboratory work.

PHYSIOLOGY.

None of the classes in physiology will be given unless the total number of students electing work in the department reaches at least six.

I (=1).—PHYSIOLOGY. Five hours credit.

II (=2).—PHYSIOLOGY. Five hours credit.

III (=6).—PHYSIOLOGY. Five hours credit.

PSYCHOLOGY.

I.—ADVANCED PSYCHOLOGY. Two hours credit.

II (nearly=8 or 9).—HISTORY OF PHILOSOPHY, ANCIENT OR MODERN. Two hours credit.

SHOP WORK AND MANUAL TRAINING.

In addition to the engineering courses regularly given by this department, other courses are offered in the summer for the benefit of artisans, teachers of manual training, and all others who wish to acquire skill in the use of tools. No scholarship requirements are necessary for admission to any of these courses, but no applicant under sixteen years of age can be received. No university credit is given for any of them except the regular engineering shop courses, I, II, III, IV, V, VI, each of which gives two and one-half hours of credit in the School of Engineering.

For purposes of registration each course will be counted as a two-hour course; that is, a student may enroll for three courses in shop work and for nothing else, or for two courses in shop work and one two-hour course in some other subject, or for one course in shop work and three or four hours in other subjects. The total number of hours required in each course is seventy-eight. The shops will be open from 7 to 12 six days in the week, and from 1 to 6 five days in the week, throughout the six-weeks session. Students will arrange their hours of work by conference with the instructor.

All materials used in shop work, except in courses V and VI and the lathe tools made in course I and used in course IV, are purchased by the student with coupons which must be bought in advance at the office of the Secretary. The coal for courses in the forge shop must be paid for with coupons at the rate of \$1.75 for each course.

FORGE-SHOP WORK.

The method of instruction here is that of working from books, blue-prints, oral explanation, and blackboard sketches. Each student is allowed to advance as rapidly as possible, thus receiving individual instruction. Class instruction is given by lectures and actual demonstration of the work. Quality of work is preferable to quantity. Students are graded daily and given an occasional examination. Each student devotes some time to the general repair work. Laborious exercises are not given. Ability to do commercial work is not expected of the student in the limited time given to one term's work.

SHOP I.—FORGING. The regular beginning forging course for students in engineering.

SHOP 12.—ADVANCED FORGING. Offered to those who have completed Shop I or have had the equivalent elsewhere.

SHOP 13.—BLACKSMITHING. Those who desire to learn so much of the blacksmith's trade as will enable them to do work at home or on the farm will find this course desirable.

SHOP 14.—ADVANCED BLACKSMITHING. To those who wish to learn more of general blacksmithing this course is offered.

PATTERN-SHOP WORK.

SHOP II.—PATTERN-MAKING. This course is a part of the regular work required of all students in the School of Engineering.

SHOP 22.—ADVANCED PATTERN-MAKING. Students or workmen having had sufficient tool instruction or practice to enable them to do so may take this course, and thus obtain a far better knowledge of the work than is possible in the limited time allowed for Shop II.

SHOP 23.—MANUAL TRAINING. A course suitable for use in the lower grades.

SHOP 24.—ADVANCED SLOYD WORK, JOINERY AND WOOD-TURNING. A high-school course.

SHOP 25.—FURNITURE MAKING. For students having previous training in bench work.

SHOP 26.—ART METAL WORK. This course is especially desirable for students of fine arts.

MACHINE-SHOP WORK.

SHOP III.—BENCH WORK.

SHOP 33.—A practical course in the application of Shop III.

SHOP IV.—LATHE WORK.

SHOP V.—LATHE AND MACHINE TOOL WORK.

SHOP VI.—HEAVY LATHE WORK, PLANER AND MILLING-MACHINE WORK.

SOCIOLOGY AND ECONOMICS.

I (nearly=3).—ECONOMIC HISTORY OF THE UNITED STATES. Two hours credit.

II (nearly=1).—ELEMENTS OF SOCIOLOGY. Two hours credit.

ZOOLOGY.

I.—METHODS IN BIOLOGICAL INSTRUCTION. Three hours credit.

II (in part=1).—ELEMENTARY ZOOLOGY. Three hours credit.

III (in part=1).—ELEMENTARY ZOOLOGY. Two hours credit.

IV.—Opportunities will be offered graduate students to carry on advanced work in lines for which they are prepared and for which the department is equipped; but specific courses cannot be counted on except after correspondence.

Supplementary Course, July 23 to August 12.

V.—BIONOMICS AND EVOLUTION. Three hours credit.

PART IV.

INSTITUTIONS CONNECTED WITH
THE UNIVERSITY AND UN-
DER ITS CONTROL.

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IX. THE LIBRARIES.

CARRIE M. WATSON, Librarian.

EDITH M. CLARKE, Cataloguer.

CLARA S. GILLHAM, Loan Desk Assistant.

MARY M. SMELSER, Accession Assistant.

DORA C. RENN, Reference Assistant.

PAULINE MADDEN, Reference Assistant.

MARY A. COLLINS, Reference Assistant.

The libraries of the University contain 59,342 volumes and 37,000 pamphlets. These numbers are increasing as rapidly as funds will permit. An annual appropriation of \$8000 is devoted to the purchase of books, and about 4000 books and 2000 pamphlets will be added during the year 1908-'09. The books are selected with the greatest care, and the endeavor is made to furnish the students the latest and best authorities in the various departments. The library is sufficiently large to enable the student to prosecute research and to furnish him substantial aid in his investigations. Source material in American and European history and in other subjects is being constantly collected, and affords in some lines all necessary material for advanced original work.

THE UNIVERSITY LIBRARY.

The University library is in the Spooner Library Building, and is open every day in the year, Sundays and holidays excepted. Library hours are from eight A. M. to six P. M.; Saturdays from eight A. M. to twelve M. The reading-room is open from seven P. M. to ten P. M. when the University is in session. Liberal facilities for using the library are offered to all members of the University. All books, except reference books and books too rare to be easily replaced, may be taken from the library by the students for three weeks. However, if a book is needed for a special purpose or a class reservation, it may be recalled by the Librarian, and must be returned at once, after notice is received.

BOOK-STACKS. There are five stories in the stack-room of the library, each eight feet high, making all the books within easy reach. The stacks and the flooring of these rooms are of steel,

making a fire-proof depository for the books. Books are classified and arranged on the shelves in the stack-room by the Dewey system of classification.

CATALOGUE. The catalogue of the library contains about 60,000 cards. It is arranged alphabetically both as to author and subject, and the author and subject cards are catalogued together. The cards are arranged in classes in the general reading-room, making them accessible to both instructors and students.

THE GENERAL READING-ROOM. The general reading-room is a large, comfortable, well-equipped and well-lighted room, on the main floor of the Spooner Library. It is furnished with 200 electric lamps. In this room are about 1000 volumes of general reference books, cyclopedias, dictionaries, and Poole's Index to Periodical Literature, and other books which are of special value to students for reference purposes.

DEPARTMENTAL READING-ROOMS. The departments of German, philosophy, Latin, English and mathematics have reading-rooms on the lower floor of the library, and the departments of American and European history, sociology and economics have the whole of the upper floor of the building.

PERIODICAL ROOM. The University provides in this room 624 periodicals and learned-society publications and 158 state newspapers, all of which are at the service of instructors and students. The list of periodicals is very large, and includes almost all of the important publications of America and Europe.

OFFICES, ETC. Offices for the Librarian and cataloguer and the accession-room adjoin the general reading-room, and on the lower floor are storerooms, etc.

DEPARTMENT LIBRARIES. Besides the books in Spooner Library Building, there are eleven departmental libraries in the different buildings of the University. They are placed in close conjunction with the various laboratories and lecture-rooms, so as to be immediately accessible to students engaged in scientific work.

THE LAW LIBRARY. The law library is located in Green Hall. It contains 4353 volumes.

THE LAWRENCE PUBLIC LIBRARY.

The public library of Lawrence is accessible to students. A new Carnegie building has been erected and is now occupied. This library now contains 8450 volumes, mainly of general literature and fiction, and 2250 public documents, and therefore supplements the University library in that direction.

X. THE GYMNASIUM.

DR. JAMES NAISMITH, Director.

Assistant Professor FISH.

W. C. LANSDON.

J. P. HAGERMAN.

The Robinson Gymnasium, erected in 1907 at a cost of \$100,000, is the most modern and efficient gymnasium west of Chicago. The three floors are equipped to accommodate the greatest number of students with the greatest variety of exercises. The basement floor has a locker-room with special apartments for the various athletic teams, a system of shower baths, a swimming pool and baseball cage. The first floor is equipped throughout with the most modern apparatus for general and special exercises. This will be available at all hours of the day. The second floor will be used for all forms of athletic development, and for the various indoor games. In the gallery of this floor is an eighteen-lap track, upon which the greatest speed may be obtained with the least effort. Special rooms are equipped for fencing, boxing, wrestling, and handball.

The gymnasium is designed to benefit all students of the University, not only by giving an opportunity for general exercise and healthy recreation, but also by providing means of caring for the body, correcting faulty attitudes and functions, developing skill, physical judgment, and self-control. It provides, therefore, for specific training in view of any physical defects that may be remedied by proper care.

The department is under the supervision of a director who is himself a trained physician. He gives courses in physical education in the College designed especially for those who intend to teach. Associated with him are specialists in the various athletic sports.

EXAMINATIONS.

A thorough physical examination and measurement is offered each student and a record of results is kept as a basis for advice for exercise. The results are platted on charts, so that the student may compare himself with others and note the progress he is making. Those taking work in the gymnasium or on the ath-

letic field must pass a satisfactory examination on entering the sport. At any time that the health of the student demands it, he is debarred from taking part in any form of exercise that may injure him.

The director's office is equipped with apparatus for taking measurements and for making tests of health, skill, and strength.

The gymnasium is open from ten A. M. to six P. M. each day, Sundays excepted.

MCCOOK FIELD.

McCook Field, the gift of Col. John J. McCook, is situated only a short distance from the University and gives opportunity for all forms of outdoor athletics and sports. It contains a baseball diamond, a football field, a running-track, and facilities for field athletics. A grand stand and bleachers accommodate the spectators.

XI. THE MUSEUMS.

- FRANK STRONG, Ph. D., *ex officio* Director of the Museums.
FRANCIS H. SNOW, Ph. D., LL. D., Curator of the Entomological Collections.
LEWIS L. DYCHE, A. M., M. S., Curator of the Mammals, Birds, and Fishes.
CLARENCE E. MCCLUNG, Ph. D., Curator of the Vertebrate Paleontological Collections.
ERASMUS HAWORTH, Ph. D., Curator of the Geological and Mineralogical Collections.
WILLIAM C. STEVENS, M. S., Curator of the Herbarium.
ALEXANDER M. WILCOX, Ph. D., Curator of the Classical Museum.
HANDEL T. MARTIN, Assistant Curator of Paleontology.
CHARLES D. BUNKER, Assistant Curator of Mammals, Birds, and Fishes.

The museums of the University are extensive and valuable. The collections were begun thirty-six years ago by Dr. Francis H. Snow, and have been obtained chiefly during the past thirty years by University exploring parties in western Kansas, Colorado, Wyoming, Arizona, New Mexico, Texas, Oregon, British America, Alaska, Greenland, and South America. The expeditions have been mainly under the direction of Dr. Francis H. Snow, Dr. Samuel W. Williston, Dr. C. E. McClung, and Prof. Lewis L. Dyche. By means of the material thus accumulated, a system of exchange has been established with leading institutions and naturalists in all parts of the United States, so that the cabinets contain a very satisfactory representation of the plants, insects, mammals, birds, minerals, and fossils, not only of the state of Kansas, but also the whole of North America. The collections are nearly all housed in the Museum of Natural History, completed in 1903 at a cost of \$75,000.

In the summer of 1906 Dr. F. H. Snow conducted his twenty-fifth expedition for the collection of insects for the museum of entomology, to the Baboquivari Mountains, in Pima county, Arizona. Many new species were taken.

The twenty-sixth expedition, to the Santa Rita Mountains of

Arizona, was made in the summer of 1907. Over 12,000 specimens were obtained.

During the summer of 1905 the zoölogy department conducted an exploration of the John Day region of central Oregon for the purpose of obtaining vertebrate fossils peculiar to this Miocene area. The party, under the direction of Doctor McClung, consisted of Messrs. H. T. Martin, W. J. Baumgartner, and Roy Hoskins. The result of the expedition was to add materially to the mammalian fossils now in the collections. A representative series of Eocene leaves was also secured.

In the summer of 1904 Doctor McClung, with a party of five, made extensive additions to the Cretaceous vertebrate material in the museum by collections from western Kansas.

In the same year Mr. H. T. Martin, assistant curator of vertebrate paleontology, secured a notable series of mammalian fossils during a season's collecting in the Santa Cruz beds of Patagonia.

Additions to the herbarium have been made by expeditions under the direction of Doctor Barber from Maine, the Ozark region of Missouri and Arkansas, North Dakota, Oregon, Washington, and western Canada.

ENTOMOLOGY.

The entomological collection is the largest connected with any educational institution in the United States. It contains 21,000 species and 275,000 specimens, representing all the different orders of insects. Nearly the whole of this material has been obtained by the expeditions conducted by the head of the department of systematic entomology during the summer vacations of the past thirty years, supplemented by a system of exchanges with collectors and museums in all parts of the world. The orders of Lepidoptera, Coleoptera and Diptera, are especially well represented. Among the Lepidoptera there are nearly 100 "types" of species described by Grote and Henry Edwards; among the Diptera there are nearly 600 "types" of species described by Williston, Townsend, W. A. Snow, Aldrich, Adams, Day, Whitney, and Brown; and among the Hymenoptera 300 "types" described by Viereck.

The Cabinet of Coleoptera contains 8100 North American species and 2000 European and exotic forms, and the Lepidoptera and Diptera include more than 3000 species of each order.

The instruction in this department has special reference to

the discrimination of the beneficial from the injurious species, and the extensive collections are of practical value to the agricultural and horticultural interests of the state as well as to the students of the University in the determination of the names and habits of our insect friends and foes.

There is no other university in the country where the advanced student of systematic entomology can find ready access to such an abundance of material for the prosecution of his researches. The collection occupies part of the second and third floors of the Museum of Natural History.

ZOOLOGY.

The collection of large mammals indigenous to the North American continent is one of the most complete in the world. The specimens include the more common and well-known animals of the United States, an excellent representation of the animals of the Atlantic coast as far north as Cape Sabine and from the continent of Greenland. Also a series from the Pacific coast as far north as the Aleutian islands and from the interior of Alaska. This large collection is being placed on exhibition on the second floor of the Museum of Natural History, by Prof. L. L. Dyche and his assistants. The collection will occupy the entire floor, which will be known as "Mammal Hall." New material is constantly being added, and mounted for study and exhibition.

Many thousands of specimens in the shape of skins, skeletons, and skulls, packed away for years in drawers and cases for the want of space for proper exhibition, are now being placed on exhibition in the Museum of Natural History. These are available for students in zoölogy and comparative anatomy, and are used by instructors to illustrate their various lectures.

In the ornithological collections there are between 3000 and 4000 specimens, most of which are carefully protected in moth-proof cases. Many of these are unmounted skins, furnishing ample material for laboratory study when fresh specimens cannot be readily obtained. There is also a fine series of skeletons, representing species in size from the shrews and bats to elephants and whales. These specimens are of great value to students in osteology and paleontology.

An alcoholic collection of marine radiates, mollusks and arthropods from the Atlantic and Pacific coasts affords to the zoölogical students the means of investigating the anatomical

structure of the leading forms in all of the great types of the animal kingdom.

In the conchological cabinet are included nearly 1000 species of shells, from all parts of the world.

Recently extensive additions to the invertebrate collections have been made by expeditions to Bermuda and to the northern Atlantic coast. While specimens from all the branches were collected, special attention was directed toward the Porifera, Cœlenterata, and Echinodermata. The teaching museum is now well supplied with representative specimens of all the invertebrate orders.

PALEONTOLOGY.

The collections in paleontology offer the best facilities not only for instruction in general stratigraphic geology, but also for special advanced work in systematic paleontology. The collections of invertebrates include about 2000 species, distributed among about 500 genera. They represent all of the principal geological formations, but are especially rich in Kansas forms. The numbers of genera and species from the chief geologic groups are nearly as follows:

Tertiary, 80 genera, 200 species.

Cretaceous, 80 genera, 200 species.

Jurassic, 10 genera, 30 species.

Triassic, 25 genera, 75 species.

Permo-carboniferous, 60 genera, 750 species.

Devonian, 80 genera, 300 species.

Silurian, 75 genera, 250 species.

Ordovician, 90 genera, 250 species.

Cambrian, 20 genera, 30 species.

The collection of fossil vertebrates, with but a few exceptions, is the most extensive in America, and in the Cretaceous forms is unequaled elsewhere. From the Miocene Tertiary of Kansas, Wyoming and South Dakota nearly all the known genera are represented. The Cretaceous animals are represented by many hundreds of specimens, including not a few of exceptional perfection and completeness. The mosasaurs include five genera and twelve or fifteen species, showing in most of them the complete anatomy. Of fossil birds, the best specimens known are in the museum, and some of the specimens of pterodactyls and plesiosaurs are unequaled in any other collection. Nearly all genera of the Cretaceous fishes are represented, and, in some cases, by exceptional specimens. A creditable series of turtles,

including a number of type specimens, is contained in the collection. From the Laramie Cretaceous, the most notable specimen is a mounted skull of the gigantic dinosaur, *Triceratops*. From the Permian and Carboniferous there are also a number of valuable specimens. All together, about 400 species of extinct vertebrates are represented in the museum.

Valuable additions are constantly being made to the collections, both of invertebrates and vertebrates, chiefly by field expeditions. Perhaps the most important of these is a new species of plesiosaur, which has been thoroughly restored and mounted as an entire skeleton. It is without doubt the finest specimen extant. During the past year was added a remarkably fine free mount of an entire skeleton of the extinct *Bison occidentalis*. This unique specimen was collected and mounted by Mr. Martin, and is the most finished preparation in the museum. A half relief mount of the giant Cretaceous fish *Xiphactinus audax* is another important achievement of last year. By exchange with the American Museum of Natural History, New York, a series of casts showing the evolution of the horse has been secured. All the collections have been gone over and a card catalogue prepared, so that reference to the specimens is much easier. In order to render the collections as interesting and profitable as possible the specimens have been supplied with descriptive labels and a synoptic, or index, case has been placed at the entrance to the paleontology rooms. The collection occupies the most of the upper floor of the Museum of Natural History.

PALEOBOTANY.

The collection in paleobotany is especially rich and valuable, representing thousands of specimens. The Dakota and Comanche Cretaceous series are the most extensive, and include many types of species and undescribed forms. In addition to the collection of Tertiary plants, there is a very large and valuable series of Carboniferous plants from Kansas, including many new forms yet unknown to science. The collection is placed with that of paleontology. The purchase of a number of cases has made it possible to put on exhibition many more specimens than have before been open for public inspection.

THE HERBARIUM.

The herbarium includes about 7500 specimens, identified and labeled, of flowering plants, besides much material partly identified. The flora of the western Rocky Mountains is especially

well represented. There is also a considerable amount of cryptogamic material, including sets of economic fungi of North America and of North American lichens. The herbarium is housed in Snow Hall. Besides these specimens much of the recent material has not yet been recorded.

GEOLOGICAL COLLECTIONS.

The museum of economic geology and physical geology contains many hundred specimens. In economic geology there is a large collection of ores of various kinds, especially chosen to represent, first, the character of the ores, and second, the mode of ore formations. Specimens of almost all kinds of ores and other economic products, such as gypsum, coal, oil, etc., are included and arranged in accordance with the two ideas: first, of economic value, and second, of origin or formation. Specially to be mentioned in this connection is a very complete collection of lead and zinc ores and associated minerals from the Galena-Joplin district, which is the greatest field for mining zinc ore known in the world.

The petrographic collection contains about 2000 specimens of crystalline rocks from all parts of the world, including the largest collection ever made of granites, porphyrites and basic dike rocks, from the area of crystalline rocks in Missouri. There is also a large and specially selected collection of crystalline rocks from New Hampshire, and another collection from the Lake Superior region.

The mineralogical collection is divided into two groups: first, a working collection for students in the mineralogical laboratory, and second, an exhibitive collection for the museum. The former contains fair specimens and material for use in the laboratory, but representing all the leading classes of minerals, while the latter contains more pretentious and showy specimens, more generally interesting to the public.

THE CLASSICAL MUSEUM.

The classical museum contains full-sized plaster casts of the Hermes and Satyr of Praxiteles, the Venus of Melos, the so-called Theseus of the Parthenon, three Metopes and fifty-five feet of the frieze of the Parthenon, Varvakeion and Lenormant statuettes, and the Strangford shield, Athena Parthenos, the Hegeso tombstone, the Opheus relief, the Satyr and Mænad relief, the Borghese Warrior, the Discobolos of Myron as restored by Furtwängler, Augustus in military dress, the so-called Germani-

cus, nineteen busts of Greek sculpture, and Greek and Roman authors and emperors, two Tanagra figurines, and the Nike of Paionis inscription.

Models of the Acropolis of Athens, the east pediment of the Zeus temple at Olympia, the Victories of Paionis and Samothrace, and the Vatican Amazon.

Relief maps of Athens and Rome.

Laloux's restorations of Olympia, Defrasse's restorations of Epidauros, Pontremoli's restoration of the Pergamon, and Weichardt's restoration of Pompeii.

Stuart and Revett's *Antiquities of Athens*, 363 plates; Penrose's *Athenian Architecture*, 47 plates; Inwood's *Erechtheum*, 39 plates; Bohn's *Propylæa*, 21 plates; Ross, Schaubert and Hansen's *Athena Nike Temple*, 13 plates; Michaelis's *Parthenon*, 15 plates; Cockerell's *Temples of Ægina and Bassæ*, 37 plates; Koldewey and Puchstein's *Temples of Lower Italy and Sicily*, 29 plates; Major's *Temples of Pæstum*, 25 plates; Adler's *Mausoleum*, 5 plates; Le Roy's *Ruins of the most beautiful monuments of Greece*, 60 plates; Fenger's eight colored plates of Doric architecture; the plates of the final reports of the excavations at Assos and Delphi, as far as they have yet been published; Piranesi's large engravings of the columns of Trajan and Marcus Aurelius; twelve photographs of architectural models in the Metropolitan Museum, New York.

A complete set (600 so far) of Brunn's plates of Greek and Roman sculpture; 55 Braun photographs of the Elgin marbles; 139 plates of the Sabouroff collection of sculpture, terra-cottas, vases, and bronzes; Furtwaengler's ancient gems, 67 plates; 82 plates of the silver vases and utensils found at Hildesheim and Boscoreale; 6 colored plates of Odyssey paintings found in Rome, Dodwell's; 30 views of Greece, in color; Lau's and Genick's 84 colored plates of Greek vases; 27 colored plates of Greek vases in the British Museum; Furtwaengler and Loeschke's Mycenæan vases, 49 plates; Harrison and MacColl's Greek vases, 43 plates; Furtwaengler and Reichhold's large plates of Greek vases, as far as they have been published, 90; 11 colored plates of Greek and Etruscan terra-cotta sarcophagi in the British Museum; Preller's four cartoons of wall-paintings of ancient Greek landscapes in the Albertinum, at Dresden; 39 plates of *Monumenti Inediti* and *Antike Denmæler* vases, sculpture, and architecture; 650 photographs illustrating Roman topography and life.

A *facsimile* of the whole of the Bacchylides manuscript; 36 plates of other Greek manuscripts; 25 *facsimiles* of Biblical

manuscripts in the British Museum; 30 *facsimiles* of the Flinders Petrie Egyptian Greek papyri; 62 plates of Latin manuscripts; Roehl's collection of oldest Greek manuscripts, many of them in *facsimile*.

Baumeister's monuments of classical antiquity, 95 plates and 2400 illustrations; 2000 stereopticon slides of Greek and Roman views, portraits, buildings, statues, paintings, vases, and manuscripts.

The classical museum is located in Fraser Hall, south wing, second floor.

XII. UNIVERSITY GEOLOGICAL SURVEY OF KANSAS.

FRANK STRONG, Ph. D., Director, *ex officio*.

ERASMUS HAWORTH, Ph. D., Superintendent and Geologist.

EDGAR H. S. BAILEY, Ph. D., Chemist.

As explained below, the Geological Survey is work undertaken for the good of the state without compensation to members of the Faculty. It is state work, and should be done by a state institution, and without cost to the state other than necessary expenses. The department of geology and mining, through its head, who is also superintendent of the Survey and state geologist, works through and in conjunction with the Survey to develop as largely as possible the mineral resources of the state. The results already have been of very great value to the state, especially in the development of coal, oil, gas, Portland cement, gypsum and its products, clay manufactures, etc.

The University Geological Survey of Kansas was organized by the Board of Regents of the University in 1894, under authority conferred by legislative act, and is supported by direct legislative appropriations. The object of the organization is to accomplish a geological survey of the state as rapidly as possible—a survey giving a complete exposition of the geological and mineralogical resources of the state, including all subjects of economic and scientific importance.

It is contemplated that the work will be done by members of the University Faculty and advanced students, so that the cost to the state will be a minimum. The Faculty of the College recognizes such student work by giving credit for it, the same as for work done in the classrooms and laboratories of the University.

Work was first begun on the Survey in the summer of 1893, and has been carried forward steadily ever since. During that summer the department of physical geology had three assistants doing field-work; in 1894, four; in 1895, twelve; in 1896, twelve; in 1897, seven; in 1898, five; in 1899, five; in 1900, four; in 1901, five; and in 1902, five. The subjects thus far investigated are:

The general stratigraphy of the entire state; the coal-fields; salt; gypsum—on all of which special reports have been published. In addition, much work has been done in the investigation of the lead and zinc ore deposits of the state, and a report on the same is nearing completion. A large amount of work has also been done in investigating the oil and gas territory in the southeastern part of the state.

The department of paleontology of the University has likewise done a large amount of work investigating the fossil fauna and flora of the state, and has published two reports on the subject.

The department of chemistry has made an investigation of the mineral waters of the state, and has published a report on the subject.

The Survey has already published the following reports, all of which are for free distribution, the recipient paying transportation charges. (Those marked with a star are out of print.)

Volume	I, 1896—Reconnaissance Report on General Stratigraphy of Eastern Kansas.*	
Volume	II, 1897—General Geology of Western Kansas.*	
Volume	III, 1898—Special Report on Coal.....	28 cents.
Volume	IV, 1898—On Upper Cretaceous Paleontology.*	
Volume	V, 1899—Special Report on Gypsum and Gypsum Cement Plasters.....	16 cents.
Volume	VI, 1900—Carboniferous Invertebrates and Cretaceous Fishes	28 "
Volume	VII, 1902—Mineral Waters	20 "
Volume	VIII, 1906—Special Report on Lead and Zinc..	28 "
	Report on Mineral Resources of Kansas for 1897.....	4 "
	Report on Mineral Resources of Kansas for 1898.*	
	Report on Mineral Resources of Kansas for 1899.....	4 "
	Report on Mineral Resources of Kansas for 1900, 1901...	5 "
	Report on Mineral Resources of Kansas for 1902.....	7 "
	Report on Mineral Resources of Kansas for 1903.....	3 "

Volume I is devoted entirely to reconnaissance work in stratigraphy and a preliminary description of the general geology of eastern Kansas, with a short description of the oil- and gas-fields of the state and a preliminary catalogue of invertebrate fossils found in the Carboniferous age.

Volume II is a similar description of the stratigraphy and other features of general geology of western Kansas, being a

companion to Volume I. It has a short chapter on some phases of vertebrate paleontology.

Volume III is a special report on coal, giving a general account of the stratigraphy of eastern Kansas, the most extensive yet published, and a detailed account of the coal-bearing strata of the state, methods of mining, the chemical and physical properties of Kansas coal, and other points of a like nature.

Volume IV is devoted entirely to the paleontology of the Upper Cretaceous. It is profusely illustrated with plates and cuts of vertebrate fossils from western Kansas.

Volume V is a special report on gypsum and gypsum cement plasters, giving the results of about three years' investigation. This is probably the best account yet published on this interesting product.

Volume VI is the second volume on paleontology, and is occupied jointly by Carboniferous invertebrates and Cretaceous fishes.

Volume VII is devoted entirely to the mineral waters of the state, and gives a description not only of the mineral waters of Kansas, but of mineral waters in general.

Volume VIII is a special report on lead and zinc.

Volume IX, a special report on oil and gas, is in press.

The series of annual reports began with a report on the mineral productions of the state for 1897, and has been issued annually ever since, excepting one year. The reports for 1900 and 1901 were issued jointly. Largely they are repetitions of the same subjects, as each one of them contains a complete summary of the total state production to date. They cover the subjects of gold, silver, lead and zinc, coal, oil, gas, clay products, gypsum, hydraulic and Portland cements, building stone, and salt.

The report for the year 1902 was delayed in publication and thereby admitted a short report on the extraordinary flood of the Kansas river in May and June, 1903. The report for 1898 contains an extended description of Kansas salt as a special article, and similarly the report for 1902 has a specially prepared chapter on Portland cement.

XII. HIGH SCHOOL VISITATION.

WILLIAM H. JOHNSON, A. M., Professor of Education and
High-school Visitor.

By the constitution of the state the University of Kansas is made the head of the public school system. This provision places upon the University a definite obligation. It makes it necessary for the University to maintain its position at the head of the whole system by means of an organic relation to the parts.

Some of the ways in which this may be accomplished have been determined by legislative enactment. The county high-school law provides that the schools must maintain courses of study which will enable graduates to enter the Freshman class of the University without condition. The Barnes law also makes the provision that the University shall determine the standard which high schools must reach in order to receive the benefits accruing from that act. And the law which has reference to the certification of teachers who are graduates of the colleges in Kansas emphasizes the fact that their standard of entrance requirements must be equivalent to that maintained by the University.

In order that the University may fulfil its function in this regard, visitation and coöperation are necessary. When the preparatory department was dropped in 1891 the high schools began to enlarge their facilities and broaden their courses of study in order that they might successfully carry on preparatory work. The University sought to assist them in this larger field by visitation and accreditation, and while it was carried on in a more or less desultory and unsystematic way by various members of the Faculty, it served the purpose very well for a time and kept alive an intimate relationship between the University and the preparatory high schools.

It was not long, however, until this method was found very inadequate. As the University grew in size and complexity, and more especially as the high schools increased in number, this method of visitation became inefficient and impractical. Therefore, in September, 1905, a regular University officer was elected, known as the High School Visitor, who should devote

his entire time, or as much of it as was necessary, to this important work. The duties of this officer may be briefly enumerated as follows: To visit the high schools as often as practicable, for the purpose of consulting with principals and instructors about their work and making such observations upon the equipment, character, and amount of instruction given as time and opportunity will permit; to furnish principals and superintendents with suggestive courses of study which will satisfy college entrance requirements, and also to furnish in detail the amount of work that should be covered in each unit of time; to assist school authorities in every possible way to increase the efficiency of their schools, and make of them consistent educational instruments in the life of the state.

The attitude of all connected with this work in any capacity is one of friendliness and coöperation. It is the duty of the University to meet the requirements of the high schools, not by lowering its standard, but by broadening the field of preparatory requirements, thus giving the high schools an opportunity to better serve the needs of the community for which they really exist. The high school has a definite function to perform in this system of public education, and by doing this conscientiously is best serving the interests of the University. What the University needs, what the state is expecting of its high school graduates, is a four-year course of consistent, thorough training, which will enable them to undertake the more difficult tasks of college work, or the more serious responsibilities of active life. To this end, the University, through its High School Visitor, comes to the 200 high schools in Kansas in the belief that it can render valuable service in the way of advice, suggestion, and coöperation.

ACCREDITED SCHOOLS.

High schools which maintain a high standard of proficiency and which have adopted a course of study covering four years of work are recognized by the University of Kansas by placing them on an accredited list. This list is revised every year and published in the annual catalogue. The graduates of schools thus affiliated with the University, when recommended by the principal or superintendent, are entitled to entrance credit without examination, provided the subjects for which they ask credit are distributed according to the required groups.

An accredited school should measure up to the following requirements:

1. The instructors should be well qualified and specially trained, both with reference to subject-matter and methods for a special line of work. They should be graduates of a university, college, or high-grade normal school.

2. Instructors should not be required to carry more than six recitations per day, and these should be confined to two lines of work, as, for example, English and history.

3. In the larger high schools (those enrolling 300 or more), the principal should have at least one-half of his time for supervision. In the smaller schools, he should have from one to three periods a day for the same purpose.

4. The laboratories should be furnished with tables for individual work and such apparatus as is necessary to enable the students to perform all experiments.

5. A laboratory period should be twice the length of a recitation period, and in each of the sciences there should be two laboratory periods per week.

6. Students should have access to standard books of reference and supplementary works in literature, history, science, and art.

7. The efficiency of instruction, habits of thought and study, and general intellectual and moral conditions in a school are important factors, and therefore only the schools which rank well in these particulars, as evidenced by careful, sympathetic inspection, shall be considered eligible for this list.

It has been the custom of the University for some years past to accredit and list certain high schools located in other states. This custom will be continued no longer, except in states where there is no high school inspection. Hereafter the University will honor all certified entrance credits from high schools and academies which are accredited by the North Central Association of Colleges and Secondary Schools.

I.

Schools in this list are fully accredited and are working under the most favorable conditions.

<i>Name of School.</i>	<i>Superintendent.</i>	<i>Principal.</i>
Abilene	W. A. Stacey, B.S.	P. Williams, A.M.
Anthony	J. H. Clement, A.B.	Adeline Finn, A. B.
Argentine	H. P. Butcher, A.B.	Minnie J. Oliverson, A.B.
Arkansas City	J. F. Bender, A.B.	J. W. Murphy, A.B.
Atchison County, Effingham .....	.....	W. H. Keller.
Atchison	Nathan T. Veatch.	A. H. Speer, A.B.
Bartlesville, Okla.	Lynn Glover	Trilla Reed, A.B.
Beloit	J. O. Hall, A.B.	T. P. Downs.
Blue Rapids	C. C. Brown, M.A.	E. A. Robinson, M.A.
Burlington	Inez M. Chapman, A.B. ..	Maud G. Neyhart, A.B.
Chanute	J. H. Adams.	H. P. Shepherd, B.S.
Chase County, Cottonwood Falls. ....	.....	B. F. Martin.
Cherokee County, Columbus .....	.....	M. L. Catlett.
Clay County, Clay Center .....	.....	S. A. Bardwell.
Coffeyville	Wm. M. Sinclair.	H. L. Dwelle.
Concordia	A. F. Senter, B.S.	Ray Green, B.S.
Decatur County, Oberlin .....	.....	W. G. Riste.
Dickinson County, Chapman .....	.....	J. P. Perrill, B.P.
Dodge City	S. V. Mallory, B.S.	C. E. Coe, B.A.
El Dorado	Warren Baker	C. F. Smith, B.S.
Ellsworth	Homer S. Myers, A.M. ..	O. O. Smith, A.B.
El Reno, Okla.	F. N. Howell, A.B.	C. H. Thuermer, A.B.
Emporia	L. A. Lowther, M.A.	C. H. Lyon.
Eureka	B. E. Lewis, M.A.	Gertrude Dillon, A.B.
Fort Scott	D. M. Bowen, A.B.	J. B. Stokesberry, A.B.
Frankfort	M. G. Kirkpatrick.	Harriet Landers.
Galena	Leslie T. Huffman.	Chas. H. Brooks.
Garden City	E. F. Ewing, A.B.	G. E. Brown.
Garnett	C. H. Oman, A.B.	Bess M. Kilbourn, A.B.
Halstead	C. O. Smith.	H. J. Bischoff, A.B.
Harper	E. E. Sluss, B.S.	Flossie Van Wagnen.
Herington	A. J. McAllister, B.S.	H. J. Johnson, B.Ped.
Hiawatha	Geo. G. Pinney, A.B.	Raymond G. Taylor, A.B.
Holton	H. H. Van Fleet, A.B.	R. M. Winger, A.B.
Humboldt	A. I. Decker.	Edna Henrichs, A.B.
Hutchinson	Richard R. Price, M.A.	Chas. A. Wagner, A.B.
Iola	L. W. Mayberry, A.B.	L. H. Wishard.
Junction City	W. H. Heusner, M.A.	R. F. Mills, A.B.
Kansas City	M. E. Pearson, B.D.	J. M. Winslow, M.A.
Kingman	A. W. Ault, A.B.	Maude A. Babcock.
Labette County, Altamont	F. M. Wood, B.S.	W. M. Kyser, A.B.
Lawrence	F. P. Smith, M.A.	F. H. Olney, A.B.
Leavenworth	George W. Kendrick.	Belle Wittrock.
Lewis Academy, Wichita .....	.....	R. S. Lawrence, Ph.D.
Lyndon	John H. Linn.	Stella Olcott, A.B.
Lyons	T. A. Edgerton, B.Ped. ..	Louis Ringwalt, B.Ped.
Mankato	F. W. Simmonds, M.S.	Myrtle Pider, A.B.
Marion	C. E. St. John.	Clara Morris.
Marysville	C. A. Strong.	E. C. Farrar.
McPherson	Chas. W. Kline, A.B.	Clinton Wright.
Minneapolis	D. O. Smith, B.S.	Chas. J. Hilkey, M.A.

I—Concluded.

<i>Name of School.</i>	<i>Superintendent.</i>	<i>Principal.</i>
Montgomery County, Independence .....	.....	S. M. Nees, B.S.
Moran	Geo. E. Jones.....	Elsie Warner, B.L.
Newton	D. F. Shirk, A.B.....	O. J. Silverwood, A.B.
Norton County, Norton .....	.....	H. H. Gerardy.
Olathe	R. L. Parker, M.A.....	W. H. Eisenmon, A.B.
Osage City	E. C. Hackney.....	C. D. Jennings.
Osawatomie	Floyd B. Lee.....	Ray E. York, A.B.
Ottawa	A. L. Bell, M.A.....	R. E. Gowans, A.B.
Paola	F. K. Ferguson, B.S.....	C. H. Hepworth, Ph.B.
Parsons	T. A. Higdon, M.A.....	Louise M. Schaub.
Peabody	W. D. Ross, M.A.....	Daisy A. Spilman, A.B.
Pittsburg	A. H. Bushey, A.B.....	Robert E. Hartsock, B.S.
Plainville	Kathryn Chance.....	.....
Pratt County, Pratt .....	.....	E. H. Ellsworth, M.A.
Reno County, Nickerson .....	.....	E. B. Smith, M.A.
Rosedale	Geo. E. Rose, M.S.....	Anna D. White, A.B.
Sabetha	Geo. T. Beach, M.A.....	Helen Ingham, A.B.
St. John	Charles M. Hilleary.....	Joseph H. Byers, A.B.
Salina	John Lofly, A.B.....	Earl W. Pettibone, A.B.
Sedgwick	Robt. N. Halbert, Ph.B.....	Blanche Culp, A.B.
Southern Kansas Academy, Eureka .....	.....	J. F. Eaton, M.A.
Sterling	Geo. L. Seeley, A.B.....	Jeanette M. Inches, Ph.B.
St. John's Military School, Salina.....	.....	Wm. N. Colton, A.B.
Sumner County, Wellington .....	.....	W. C. McCroskey, A.B.
Thomas County, Colby .....	.....	J. E. Chamberlain.
Topeka	L. D. Whittemore, M.A.....	H. L. Miller, A.B.
Trego County, Wa Keeney .....	.....	J. H. Niesley.
Tulsa	J. G. Masters.....	Georgia Reneau.
Valley Falls	S. D. Dice, A.B.....	Maud Myers.
Walden Academy, McPherson .....	.....	David Brunstrom, M.A.
Wichita	R. F. Knight, Ph.B.....	I. M. Allen, A.B.
Winfield	John W. Spindler, M.A.....	J. W. Gowans, A.B.
Yates Center	I. C. Gregory, A.B.....	Grace Melton.

Ia.

Schools named in this list are *fully accredited*, but fall short of the most favorable conditions in some respects. (It may be a shortage in laboratory equipment, short school term, or perhaps the teachers are required to carry too many recitations.)

<i>Name of School.</i>	<i>Superintendent.</i>	<i>Principal.</i>
Alma	F. M. Patterson, B.S.D.....	L. B. Burt.
Belleville	G. W. Kleihege, B.S.....	W. A. Cain.
Burlingame	C. A. Deardorff, M.E.....	Grace Brigham, A. B.
Caney	R. Rankin	F. R. Aldrich.
Caldwell	D. C. Porter, A.B.....	Mary Vasey.
Chelsea, Kansas City, Kan. ....	.....	Joseph Stotler, M.S.
Cherryvale	A. J. Lovett, A.M.....	Bessie G. Ryan, A.B.
Clyde	C. M. Ware.....	Mabel G. Feely, A.B.
Council Grove	W. A. Anderson, A.B.....	Lillian Hawkins.

Ia—Concluded.

<i>Name of School.</i>	<i>Superintendent.</i>	<i>Principal.</i>
Crawford County, Cherokee .....	.....	W. S. Pate.
Eskridge	C. H. Landrum, M.A....	Pearl Sanford, A.B.
Gas	Clifford R. Mitchell....	Nora Dalby.
Fredonia	R. S. Whitelaw.....	W. I. Matthews.
Girard	H. W. Shideler, A.B....	Lillian Bell, A.B.
Glen Elder	R. L. Hamilton.....	Lulu M. Walton, A.B.
Gove County, Gove..	.....	F. E. Lindley.
Great Bend	E. W. Sellers.....	W. L. Bowersox.
Greenleaf	L. P. Wharton, B.S....	Margaret McConnell, A.B.
Hoisington	J. J. Caldwell, B.Ped....	Virginia Coleman, A.B.
Horton	W. W. Wood, A.B....	D. E. McCrory, A.B.
Howard	Harley I. French.....	Anna S. Lees.
Kinsley	D. A. Baugher.....	D. A. Baugher.
Kiowa	Ira Stout	Olla Cramer.
La Harpe	A. J. Baker.....	F. M. Hyames.
Larned	W. S. Robb, B.S.....	Effie Blum, Ph.B.
Le Roy	A. M. Hambleton, M.A..	Anna Van Vickie, A.B.
Lindsborg	Charles Hjerpe, M.A....	Charles Hjerpe, M.A.
Lincoln	R. E. Long.....	Mary B. Nelson.
Marquette	J. Magnuson, A.B....	J. Magunson, A.B.
Medicine Lodge	D. W. Major, B.S.....	D. W. Major, M.A.
Muskogee, Okla.	Charles W. Briles, B.Lit.,	Ira L. Cain.
Neodesha	J. M. Steffen.....	W. E. Veerkamp.
Osborne	R. K. Farrar, B.S.....	Emma Schaich, A.B.
Phillipsburg	R. V. Phinney.....	Edith G. Hail.
Rawlins County, Atwood .....	.....	C. W. McCormick, A.B.
Russell	N. U. Spangler.....	S. J. Butts, M.A.
Sedan	H. G. Adams, B.S.....	John L. Mickey.
Seneca	R. G. Mueller, A.B....	Pearl McCurdy, Ph.B.
Sheridan County, Hoxie .....	.....	H. C. Jent.
Smith Center	T. H. Hooper, A.B....	Ethel Peters, A.B.
Stockton	C. E. McGinnis, LL.B....	Mrs. Edith McGinnis.
Troy	C. S. Hambleton.....	C. S. Hambleton.
Wamego	J. P. McCoy.....	Grace C. Eaton, A.B.
Washington	W. D. Vincent, A.B....	J. F. Lewis, A.B.

II.

The schools named in this list fall short of full preparation by
 at more than three units.

<i>Name of School.</i>	<i>Superintendent.</i>	<i>Principal.</i>
Altoona	H. C. Duckworth.....	H. C. Duckworth.
Attica	P. N. Heck.....	Georgia Hoss.
Augusta	J. H. Gibson.....	Ada Herr, A.B.
Axtell	B. F. Sinclair, A.B....	C. I. Rice.
Beattie	C. Kraemer	Elnora Stevenson.
Belle Plaine	Clarence Pearson, A.B..	Caroline Mitchell, A.B.
Blue Mound	Albert E. Lunceford....	Ellen Dingus, A.B.
Bonner Springs	L. G. French.....	Madge Woodhead.
Bronson	C. M. Smith.....	Mrs. C. M. Smith.
Brookville	F. J. Rollman.....	Sylvia Lynn, A.B.
Burrton	H. J. Davis.....	Helen Kinzer.
Carbondale	E. L. Heilmann.....	C. L. Goernandt, B.S.
Cawker City	A. P. Gregory, B.S.....	A. P. Gregory, B.S.
Centralia	Emil Kratochvil	Merle E. Fowler, A.B.

II—Concluded.

<i>Name of School.</i>	<i>Superintendent.</i>	<i>Principal.</i>
Cheney	Geo. E. Harder.....	C. A. Mahin.
Clifton	John B. White.....	Mabelle Sperry.
Colony	Joseph I. Knott.....	W. B. Wise.
Delphos		Margaret Johnston, A.B.
Dixon Township, Argonia	Will Poundstone	Lizzie Kilgore, A.B.
Douglass	J. E. Cook.....	Ethel Skinner.
Ellis	B. E. Ford, B.S.....	Miss E. M. Hoar, A.B.
Enterprise	H. B. Hungerford.	
Florence	V. E. Postma.....	Mary Baird.
Gypsum	C. E. Tilford.....	Clara M. Speckmann.
Hartford	Anna H. Brogan.....	Olive L. Collins, A.B.
Hays	Lee R. Light.....	Annie P. Hopkins.
Hill City	F. E. Brown.....	Bertha Marlatt.
Jewell City	L. D. Griffiee.....	Hazel Berry.
Kincaid	Thomas E. Osborn.....	Agnes Covalt, Ph.B.
La Cygne	D. E. Conner.....	Junia Frazier, Ph.B.
Lansing		Ira J. Bright.
Lecompton	J. B. Wilson, A.B.....	Alice Hyatt.
Linwood	C. N. Livingood.....	Daisy Hoar, A.B.
Little River	I. C. Meyer.....	Blanche Pilcher.
Moline	J. L. Shearer, B.D.....	Roy Mullendore.
Mound City	W. T. King.....	Sophia Shauver.
Nortonville	Guy T. Justis, A.B.....	Emily C. Gould, A.B.
Oakley	M. L. Smith.....	M. L. Smith.
Onaga	F. M. Chapman, A.B.....	Mary E. White, A.B.
Oskaloosa	J. W. Roberts, A.B.....	Harriet Sterling, Lit.B.
Oswego	J. F. Lyon.....	Mary Hardley, A.B.
Oswego College, Oswego		Caroline S. Johnson.
Overbrook	J. E. Watson, A.B.....	Maude Markham.
Pawnee, Okla.	J. E. McCutchan, A.B.....	O. H. Graham, B.S.
Pleasanton	J. Van Arsdale, A.B.....	Lillian E. Buntin, M. A.
Quenemo	Katie E. Edie.....	Mrs. C. K. Sellards.
Reading	Geo. Hensley	Ida Booth.
Savonburg		Charles Wright.
Scott County, Scott..		R. Bullimore.
Scranton	Thomas J. Carder.....	Cora Cook, A.B.
Sherman County, Goodland		E. E. Mitchell, Ph.B.
Stafford	A. L. Stickel, M.A.....	Henrietta Hall.
Solomon	W. D. Steen.....	Irene Pemberton.
Syracuse	H. E. Walter, A.B.....	Effie Markwell.
Tonganoxie		F. A. Brockett.
Waterville	S. L. Soper, A.B.....	V. E. Worley, B.Ped.
Wathena		Wm. G. Gambill.
Waverly	Z. E. Wyant.....	Clara Bennett.
Westmoreland	F. W. Comfort.....	Nellie McClure, Ph.B.
Wetmore		Herman Pfeifer, A.B.

III.

Schools named in this list offer courses that have been approved by the University, but they have not yet fulfilled other conditions for accredited relations.

<i>Name of School.</i>	<i>Superintendent.</i>	<i>Principal.</i>
Alden	H. H. Hildebrand, B.S..	Stella Dougherty, A.B.
Alta Vista .....	.....	E. D. McDougall, A.B.
Basehor .....	.....	Walter Harding.
Belpre	L. R. Clark	L. R. Clark.
Buffalo	H. E. Clewell	H. E. Clewell.
Bunker Hill .....	.....	R. A. Brown.
Burden	N. H. Bartlett, B.S.	Eva Rosecrans, A.B.
Burr Oak	T. Eaton, A.B.	T. Eaton, A.B.
Canton	W. H. Wolfe, A.B.	W. H. Wolfe, A.B.
Central .....	.....	Elsie Winkleman.
Clearwater	R. M. Crum.	.....
Coldwater .....	.....	W. L. Dunbar, A.B.
Coolidge .....	.....	J. H. Conard.
Corning	W. R. Anthony.	.....
Derby .....	.....	J. W. Swaney.
Dexter .....	.....	Elsie Rupp, A.B.
Edwardsville	C. E. Cannon	Lista Makimson, A.B.
Ellinwood	H. E. Powers	Helen J. Minnis.
Elsmore .....	.....	Will J. Betts, Ph. B.
Erie	F. L. Pinet	Winifred Davis.
Eudora	Charles Kelly	Mabel Beard, M.A.
Fairmount .....	.....	Ruby M. Nance.
Formosa .....	.....	Bessie Metz.
Fulton	J. B. Connolly	J. B. Connolly.
Gardner	C. J. Landrum, A.B.	Prof. McClure.
Glasco	M. C. Shaible, B.S.	Orpha Woodward.
Gray County, Cimarron .....	.....	O. B. Melia.
Greeley .....	.....	Mallie E. Ogan, A.B.
Harveyville	L. S. Rinnels	Roy Stivison.
Havensville .....	.....	Frank Broom.
Hiattville	Rose Allen	J. D. Warren.
Hillsboro	A. B. Cope, M.A.	Lelia Moore, A.B.
Irving	T. L. Wagoner	Mary Boal.
La Crosse	Sarah Squire, A.B.	Dora E. Grass, B.S.
Lebo	C. T. Sherwood	Jella W. Parker, A.B.
Leon .....	.....	Willis C. Perry.
Logan .....	.....	T. I. Gifford, Ph.M.
Lorraine .....	.....	D. L. Kattayshin, B.S.
Lucas	I. E. Winchell	I. E. Winchell.
Maplehill	J. H. Houston	Lillie Bernhard, A.B.
Mound City	G. Nyquist, M.A.	Vena Caldwell.
New Cambria .....	.....	Chas. Coverdill.
Norwich .....	.....	Neale Wright.
Pawnee Rock .....	.....	C. F. Younkin, A.B.
Redfield .....	.....	Edith McCarty.
Rossville	Rollin W. Ayers	Gertrude C. Smith.
Scandia .....	.....	W. C. Rickel.
Summerfield	C. L. Cone.	.....
St. Marys	J. Merle Evans, A.B.	Ida K. Moriarty.
Sylvan Grove .....	.....	C. E. Lewellen, M.S.
Valley Center .....	.....	Chas. M. Fifer.
Welda .....	.....	Clara Alexander.
Wellsville .....	.....	Wm. Goernandt, Ph.M.
Williamsburg	F. E. Robinson, B.S.	Miss McNabb.
Wilson	H. Coover	Agnes Clark.

PART V.

DEGREES CONFERRED AND
LISTS OF STUDENTS.

(439)

DEGREES CONFERRED.

JUNE, 1907.

MASTER OF ARTS.

Charles Arthur Barnett,	Wellsville.
Bonnie Bell,*	Lawrence.
Waitman Wiley Brown,	Kansas City.
Lillian E. Bunton,	Lawrence.
Kate Cecilia Clark,	Lawrence.
Helen Maud Clarke,	Lawrence.
Nellie King Cureton,	Williams, <i>Ariz.</i>
Charles Kneale Corkill,	Lawrence.
Lucy Dee Dickinson,	Topeka.
Thomas Bartlett Ford,	Lawrence.
Agnes Emma Graham,	Ottawa.
Antrum M. Hambleton,*	Lawrence.
Grace Althea Hayward,	Lawrence.
Charles Joseph Hilkey,	Scranton.
Murray Gardner Hill,	Lawrence.
Ethel Florence Lindner,	Lawrence.
Ulysses Grant Mitchell,	Lawrence.
Gustav A. Nyquist,	Lindsborg.
Arthur Dunn Pitcher,	Havensville.
William R. B. Robertson,	Manchester.
Charles Arthur Shively,	Hays.
Lalia Viola Walling,*	Lawrence.
Martha Steele Whitney,	Olathe.
George Fred Zook,	Fort Scott.

MASTER OF SCIENCE.

William Hobart Neville,	Lawrence.
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CIVIL ENGINEER.

Wilson Sherman Kinnear,	<i>Detroit, Mich.</i>
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BACHELOR OF ARTS.

Frank U. G. Agrellius,	Lawrence.
Theodore C. Alford,	Lawrence.
Rara Benn,	La Crosse.
Lillie Bernhard,	Lawrence.
Rillie Bernhard,	Lawrence.
Alverta Luckey Bingler,	Lawrence.

* Also received the University teachers' diploma.

BACHELOR OF ARTS—*continued.*

Gracia Blair,	Lawrence.
Midian O. Bousfield,	Kansas City.
William Abbott Brannon,	Burlington.
Mark A. Brawley,	Frankfort.
Ivy Grace Brock,	Lawrence.
Barnum Brown,	New York, N. Y.
Harry Campbell,	Wichita.
Anna Mabel Carter,*	Lawrence.
Earl Finley Clark,	Overbrook.
May Bernice Clark,*	Lawrence.
Orla Loomis Coleman,	Onelda.
Roy V. Coleman,	Onelda.
Lawrence A. Cooper,	Lawrence.
Edna Rachel Dart,	Lawrence.
Nelly Dillon,	Eureka.
Rey Oro Douglas,	Mound City.
Eveline R. Emmett,*	Lawrence.
Inez L. W. Essick,*	Kanopolis.
Willimina Everett,*	Lawrence.
J. Sumner Everingham,	Topeka.
Howard Anson Finch,	Toronto.
William B. Flowers,	Culver.
Nora Foraker,	Wellington.
Bernice Mary French,*	Lawrence.
Earl Gafford,	Minneapolis.
John Bailey Gage,	Kansas City, Mo.
Carroll Orwig Getty,	Ellsworth.
Elmer Birdell Gift,	Smith Center.
Heim Goldman,	Kansas City.
Minnie Myrtle Graffin,*	Eureka.
Frank Richard Grant,	Ellinwood.
Butler Franklin Greer,	Douglass.
Edith Griffin,	Lawrence.
John O. Hawkinson,	McPherson.
Mary Lorena Hayden,*	Holton.
Leonard Eugene Hazen,	Lawrence.
Edwin Joseph Heeney,	Severance.
Florence M. Helzer,*	Osage City.
Arthur Warren Hixson,	Hiawatha.
Roy William Hoover,	Mahaska.
Howard W. Houghton,	Beloit.
Hazel Hudson,*	Fredonia.
Karl E. Humphrey,	El Reno, Okla.
Ruby Ann Jackson,	Horton.
Bernice E. Jones,	Cawker City.
Lucy Isabella Jones,*	Lawrence.
Florence Kiser,	Lawrence.
Frank Joseph Klingberg,	Dillon.
Clementine Lamborn,*	Leavenworth.
Addie Florence Lander,*	Newton.

* Also received the University teachers' diploma.

BACHELOR OF ARTS—*concluded.*

Claude G. Landrum,	Frankfort.
John Wilbur Lapham,	Chanute.
Hallie Lasley,*	Kansas City.
Lura Lee Lemmon,	Warrensburg, Mo.
Lydia Lindsey,	Cherryvale.
Mabel Marsh,*	Kinsley.
Marjorie Marshall,	Lawrence.
Roy Heller Martin,	Kansas City, Mo.
Helen Griffin Metcalf,	Lawrence.
Mary Emily Mickey,	Valley Center.
Vanroy William Miller,	Lawrence.
Caroline Mitchell,*	Lawrence.
Dora Monahan,	Armourdale.
Riley Roy Moore,	Chapman.
Grace Bailey Muckle,*	Topeka.
Wendell W. McCandles,	Lincoln.
Lotta Maleta McDonald,*	Norton.
Blanche Paulen,	Fredonia.
Herman Pfeifer,*	Lawrence.
George E. Putnam,	Ottawa.
Capitola Pyle,	Haviland.
Chester Arthur Ramsey,	Lawrence.
Alice Mary Rankin,	Lawrence.
Harry Relihan,	Smith Center.
Harry Herbert Rhodes,	Hennessey, Okla.
Edith Sweezey Rice,	Lawrence.
Edith Elizabeth Rogers,	Lawrence.
Alice Pearl Sellers,	Osawatomie.
Flora Marie Shanklin,	Lawrence.
Benjamin Butler Shore,	Lawrence.
Charles Arthur Siler,	Lawrence.
Henry Lyman Simpson,	Kansas City.
Eleanor A. Sirpless,*	Lawrence.
Anna Cole Smith,	Lawrence.
Mignonette Spilman,	McPherson.
Harry Elmore Squire,	Attica.
Genevieve Sterling,*	Lawrence.
Vera Elizabeth Stevens,	Lawrence.
Nellie May Stevenson,	Lawrence.
Zula Ion Stickel,	Hiawatha.
Elizabeth G. Stuart,	Lawrence.
Raymond G. Taylor,	Lawrence.
Richard W. Thomas,	Emporia.
Alfred Garfield Tritt,	Wellington.
John Henry Warkentin,	Hillsboro.
Horton Emmett Webb,	Howard.
Ada Lucile Williams,	Newton.
Ethel Grace Wolcott,*	Lawrence.
Emma B. Woodbury,*	Lawrence.
Georgia M. Woodhead,	Lawrence.
Rose Frances Zurcher,	Newton.

* Also received the University teachers' diploma.

BACHELOR OF SCIENCE.

Edgar Lawrence Bailey,	Lawrence.
Louis J. Bohn,	Troy.
Glenn H. Bramwell,	Belleville.
Frank Peterson Brock,	Lawrence.
Harry F. Busch,	<i>Kansas City, Mo.</i>
Victor Cone,	<i>Fresno, Cal.</i>
Ralph Forney Gallup,	Blue Rapids.
William Hackney,	Wellington.
John Farnsworth Heine,	Fort Scott.
George Jay Hopkins,	Lawrence.
Charles Klaumann,	Iola.
Spencer R. Logan,	Cherryvale.
George Pierce Mackenzie,	Kansas City.
Arthur R. Mann,	Topeka.
Ernest Lindley Myers,	Hutchinson.
Edward N. Noyes,	Lawrence.
Frank Dewey Phillips,	Lawrence.
Claude Reid,	Morrill.
Benjamin Romig,	Ottawa.
Claude Russell,	Lawrence.
Paul F. Shuey,	Lawrence.
Ralph C. Shuey,	Lawrence.
Roy Sweezey,	Olivet.
Joel Rex Thorpe,	Merriam.
Chas. A. Whitney,	<i>New York, N. Y.</i>
Robert K. Winning,	Lawrence.

BACHELOR OF MUSIC.

Helen Bauman,	Neodesha.
Kathryn Bonar,	Lawrence.
Gertrude Cullers,	Scandia.
Charlotte Hodgson,	Lawrence.
Miriam Waters,	Bonner Springs.

BACHELOR OF PAINTING.

Lucile McNaughton,	Tonganoxie.
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BACHELOR OF LAWS.

Summerfield Alexander,	Medicine Lodge.
Clarence K. Atkinson,	Arkansas City.
Clare A. Bailey,	Lawrence.
Alva Lee Bloss,	Clay Center.
John Fred Brett,	Iola.
Elgie C. Brookens,	Harlan.
John W. Brown,	Iola.
Miles E. Canty,	Buffalo.
Charles Henry Davis,	Marysville.
Erve Orion Detrick,	Erie.
Fred S. Dunn,	Garden City.
Gilbert M. Gander,	Baldwin.
P. Dudley Gardiner,	Wichita.

BACHELOR OF LAWS—*concluded.*

Oscar B. Hartley,	Lyndon.
Nelson E. Johnson,	Kansas City.
Paul H. Kimball,	Parsons.
Hal R. Lebrecht,	Harper.
Sullivan Lomax,	Independence.
William J. Luckey,	Greenleaf.
Charles Irving Martin,	Fort Scott.
Mrs. Lou Ida Martin,	Fort Scott.
Frank J. Merrill,	Paola.
Walter E. McDonald,	Kansas City.
Walter L. McVey,	Independence.
William P. Montgomery,	Topeka.
Oak Dale Nevitt,	Oxford.
Oscar L. O'Brien,	Independence.
George Glick Orr,	Atchison.
Everett Petry,	Independence.
Charles D. Powell,	Wichita.
Jay H. Richardson,	Lawrence.
Charles Watson Smith,	Lincoln.
Solon W. Smith,	Stockton.
Cylde E. Souders,	Cheney.
Clifton Allen Spencer,	Russell Springs.
James Stuart Taylor,	Lawrence.
Thomas C. Taylor, jr.,	Lawrence.
Herbert H. Varney,	Kansas City.
Jesse Ruskin White,	Mankato.
Roy Taylor Wildman,	Lawrence.

PHARMACEUTICAL CHEMIST.

Thomas LeRoy Bennett,	Weir.
Albert J. Dows,	Lawrence.
Walter Dewitt Kemp,	Lawrence.
William Amos Lesley,	Culver.
William Omer Makinson,	Claudell.
Casper I. Middlekauff,	Hays City.
Chauncey I. Overman,	Lawrence.
Lawrence Teeter,	Lawrence.
William Lee Tully,	Burlington.
Charles L. Walkenwitz,	Leavenworth.
Paul A. Wiedemann,	Alma.
Retta Womer,	Bellaire.

DOCTOR OF MEDICINE.

Frederick C. Barker,	<i>Crescent, Okla.</i>
Charles D. Blachly, B.S.,	Leonardville.
Claude Huston Case,	Kansas City.
Logan Clendening,	<i>Kansas City, Mo.</i>
Lewis Shepard Fisher,	Merriam.
Raymond H. Fox,	Caldwell.
Clarence B. Francisco,	Lawrence.
Charles M. Gibson, B.A.,	Pittsburg.

DOCTOR OF MEDICINE—*concluded.*

Albert Newton Gray,	McPherson.
Edward E. Henderson,	<i>Centerville, Iowa.</i>
Winfred Harold Iliff,	Kansas City.
Otto B. Kiehl,	Weir.
Henson B. Lemmon, jr.,	Kansas City.
Charles H. McBurney,	<i>Custer City, Okla.</i>
J. L. McDermott, B.S.,	Rosedale.
Lyman P. McKeehan,	Kansas City.
Frank Arthur Mills,	Osborne.
Charles C. Payne,	Eudora.
Walter Jay Pearson,	Kansas City.
Benjamin Lane Phillips,	Wellsville.
Henry Lewis Regier,	Newton.
Clarence Elmer Sanders,	Merriam.
Frank Schaeffer, A.B.,	Oskaloosa.
David Emory Shy,	<i>Knobnoster, Mo.</i>
Charles M. Siever, M.D.,	Kansas City.
Lester Isaac Simpson,	<i>Weston, Mo.</i>
Arthur Ernest Smith,	Kansas City.
Albert Cecil Tolle,	<i>Kansas City, Mo.</i>
Oscar R. Troje, Ph.G.,	<i>Kansas City, Mo.</i>

ROLL OF STUDENTS.

GRADUATE SCHOOL.

* Seniors, the College, who have completed sufficient work for the A. B. degree and are doing graduate work.

Agrelius, Frank U. G., A.B. '07, University of Kansas, <i>Botany</i> ,	Columbia, Mo.
Alford, Hendry J., A.B. '05, University of Kansas, <i>Education</i> ,	Lawrence.
Andrews, Austin C., A.B. '05, University of Kansas, <i>History</i> ,	Kansas City, Mo.
Baldwin, Raymond William, A.B. '05, A.M. '06, McPherson College, <i>Sociology</i> ,	Conway.
Bartels, Minnie M., A.B. '06, McPherson College, <i>German, Philosophy</i> ,	Inman.
Bayless, Otis A., B.S. '08, University of Kansas, <i>Chemistry</i> ,	Lawrence.
Bender, John F., A.B. '06, University of Kansas, <i>French</i> ,	Arkansas City.
Bernhard, Lillie, A.B. '07, University of Kansas, <i>Zoölogy, Botany</i> ,	Lawrence.
Bernhard, Rillie, A.B. '07, University of Kansas, <i>Zoölogy, Botany</i> ,	Lawrence.
Bigger, John Dinsmore, A.B. '06, Emporia College, <i>Anatomy, Zoölogy</i> ,	Emporia.
Blair, Gracia, A.B. '07, University of Kansas, <i>Latin, English, Education</i> ,	Lawrence.
Bliss, Charles Jay, A.B. '06, University of Kansas, <i>Chemistry</i> ,	Iola.
Brock, Ivy Grace, A.B. '07, University of Kansas, <i>European History, Education</i> ,	Lawrence.
Butts, Samuel J., <i>History, Education</i> ,	Jewell.
Campbell, James Andrew, A.B. '01, A.M. '06, University of Michigan, <i>English</i> ,	Lawrence.
Chambers, Benjamin Franklin, A.B. '02, Baker University, <i>Sociology</i> ,	Lawrence.
Chapman, Inez, A.B. '01, University of Kansas, <i>Physics</i> ,	Burlington.
Clark, Earl Finley, A.B. '07, University of Kansas, <i>Zoölogy</i> ,	Overbrook.
Clark, Eva Gill, A.B. '95, A.M. '04, University of Kansas, <i>English, German</i> ,	Manhattan.

- Clarke, Helen Maud, A.B. '03, A.M. '07, University of Kansas, *Philosophy*, Lawrence.
- Couch, Alvan Harvey, A.B. '94, University of Kansas, *Education*, Sterling.
- Dart, Edna Rachel, A.B. '07, University of Kansas, Lawrence.
- Dolbee,* Cora E., A.B. '08, University of Kansas, *English*, Lawrence.
- Douthart, Lela T., A.B. '99, University of Kansas, *English*, Kansas City.
- Dunmire, Elijah Herbert, B.S. '06, University of Kansas, *Mathematics*, Lawrence.
- Faragher, Fred W., A.B. '05, University of Kansas, *Chemistry*, Sabetha.
- Finney, Royal H., A.B. '07, University of Kansas, *Zoölogy, Embryology*, La Junta, Colo.
- Ford, Bernardo E., B.S. '95, Salina Normal University, *Entomology*, Ellis.
- Gage, Ruby L., A.B. '04, Washburn College, *German*, Topeka.
- Gift, Elmer Birdell, A.B. '07, University of Kansas, *History*, Smith Center.
- Gilmore, Gertrude, A.B. '06, University of Kansas, *Spanish*, Lawrence.
- Goodwin,* Edith A., A.B. '08, University of Kansas, *Chemistry*, Chapman.
- Glenn, Presley Adams, A.B. '98, University of Kansas, *Entomology*, Lawrence.
- Graffin, Minnie Myrtle, A.B. '07, University of Kansas, *French*, Eureka.
- Griffin, Edith, A.B. '07, University of Kansas, *French*, Lawrence.
- Guffey, Don Carlos, B.S. '99, University of Missouri, M.D. '05, University of Pennsylvania, *Biology*, Rosedale.
- Hall, Justus Otho, A.B. '98, University of Kansas, *Education*, Beloit.
- Hartman, Frank A., A.B. '05, University of Kansas, *Zoölogy*, Wichita.
- Haskett,* Ivy, A.B. '08, University of Kansas, *English*, Concordia.
- Hedger, Florence A., A.B. '04, University of Kansas, *Chemistry*, Lawrence.
- Hess, John A., A.B. '08, University of Kansas, Newton, Iowa.
- Hill,* Benjamin Samuel, A.B. '08, University of Kansas, *History*, Walnut.
- Horton, Harvey Amos, A.B. '03, A.M. '04, McPherson College, *Botany*, McPherson.
- Hosford, Katherine, A.B. '06, University of Kansas, *Mathematics*, Lawrence.
- Ise, Charles Daniel, A.B. '05, University of Kansas, *Geology*, Downs.

- Johnson, Axel, A.B. '03, Bethany College,
Sociology, Economics, English, Alta Vista.
- Jones, Bernice Elizabeth, A.B. '07, University
of Kansas, *English*, Cawker City.
- Kenoyer, Leslie Elva, A.B. '06, Campbell Col-
lege, *Botany, Zoölogy*, Independence.
- Kezer, Charles L., B.S., '01, Oklahoma Agri-
cultural College, *European History*, Stillwater, Okla.
- Kilpatrick, W. Wylie, A.B. '97, Highland Uni-
versity, A.M. '98, Baker University, *Phi-
losophy, Sociology*, Palo Alto, Calif.
- King, Jefferson Perry, A.B. '01, University of
Kansas, *English*, Kansas City.
- Kiser, Florence, A.B. '07, University of Kan-
sas, *Education*, Lawrence.
- Klingberg, Frank Joseph, A.B. '07, University
of Kansas, *European History*, Dillon.
- Kohman,* Henry A., A.B. '08, University of
Kansas, *Chemistry*, Dillon.
- Landis, May, A.B. '00, University of Kansas,
Geology, Lawrence.
- Landrum, Claude G., A.B. '07, University of
Kansas, *Zoölogy*, Gardner.
- Lansdon, William Clarence, A.B. '88, Kansas
Normal College, *History*, Lawrence.
- Lasley,* Katherine, A.B. '08, University of
Kansas, Kansas City.
- Lindsay, George Clarence, A.B. '99, Hanover,
Mathematics, Wellington.
- Luce, Cora M., A.B.,
German, English, Ottawa.
- Miller, Clyde Winwood, A.B. '95, LL.B. '97,
University of Kansas, *Sociology*, Osage City
- Mitchell, Ulysses Grant, A.B. '06, A.M. '07,
University of Kansas, *Mathematics*, Lawrence.
- Moore, Myra May, A.B. '04, Ottawa Univer-
sity, *English*, Ottawa.
- McCrary, Donald E., A.B. '04, Emporia Col-
lege, *German*, Emporia.
- McDaniel,* Eugenia, A.B. '08, University of
Kansas, *Entomology*, La Crosse.
- McFarland, David Ford, A.B. '00, A.M. '01,
University of Kansas, M.S. '03, Yale, *Chem-
istry, Mineralogy*, Lawrence.
- Nelson, Earle, B.S. '05, University of Kansas,
Spanish, Lawrence.
- Olney, Frank H., A.B. '91, University of Kan-
sas, *History, Sociology*, Lawrence.
- Palmer, Emma May, A.B. '05, University of
Kansas, *German*, Lawrence.
- Parisho, Eli H., Ph.B. '07, Penn College, *Soci-
ology, Psychology*, Lawrence.

- Parker, Glenn L., B.S. '06, University of Kansas, *Civil Engineering*, Olathe.
- Peace, Larry M., A.B. '01, University of Kansas, *Botany*, Lawrence.
- Pinney,* Mary Edith, A.B. '08, University of Kansas, *Zoölogy*, Wilson.
- Pitcher, Arthur Dunn, A.B. '06, A.M. '07, University of Kansas, *Mathematics*, Havensville.
- Primm, Clarence J., A.B. '06, Park College, A.M. '07, University of Missouri, *Sociology, Economics*, Lawrence.
- Rankin,* Madonna A., A.B. '08, University of Kansas, *English*, Albuquerque, N. M.
- Riddle, Arthur Fuller, A.B. '06, Park College, *Sociology, Economics*, Minneapolis.
- Rupert, Frank Finch, A.B. '06, University of Kansas, *Chemistry*, Neodesha.
- Scammon, Richard E., A.B. '04, A.M. '06, University of Kansas, *Chemistry*, Lawrence.
- Schloz,* Katherina, A.B. '08, University of Kansas, *German*, Argentine.
- Sears,* Burton Peabody, A.B. '08, University of Kansas, *American History, Economics*, Lawrence.
- Sherwood, Noble P., B.S. '05, University of Kansas, *Mathematics*, Lawrence.
- Shore, Benjamin Butler, A.B. '07, University of Kansas, *German, English*, Lawrence.
- Shuey, Ralph C., B.S. '07, University of Kansas, *Chemistry*, Lawrence.
- Siler, Charles A., A.B. '07, University of Kansas, *Physiology*, Hutchinson.
- Simpson, Henry L., A.B. '07, University of Kansas, *French, History*, Kansas City.
- Sirpless, Eleanor A., A.B. '07, University of Kansas, *English*, Lawrence.
- Smith,* Helen Beach, A.B. '08, University of Kansas, *English, Education*, Nickerson.
- Smith, Roy K., A.B. '05, Emporia College, *Anatomy, Zoölogy, Sociology*, Lincoln.
- Stempel, Selma Anna, A.B. '00, Indiana University, *English*, Fort Madison, Iowa.
- Stevenson, Nellie May, A.B. '07, University of Kansas, *European History*, Lawrence.
- Stone,* Rosalia Rachel, A.B. '08, University of Kansas, *Botany*, Walton.
- Stough, Howard Brown, A.B. '07, Midland College, *Botany, Entomology*, Atchison.
- Stuart, Geraldine, A.B. '07, University of Kansas, *English, Philosophy*, Lawrence.
- Van Arsdale, John, A.B. '06, University of Kansas, *German*, Pleasanton.
- Warkentin, John Henry, A.B. '07, University of Kansas, *History, Economics*, Hillsboro.

Warren, Luella, A.B. '06, University of Kansas, <i>Botany</i> ,	Hutchinson.
Weatherby, Leroy S., A.B. '06, University of Kansas,	Baldwin.
Whitney, Martha S., A.B. '03, A.M. '07, University of Kansas, <i>Latin</i> ,	Olathe.
Woodhead, Georgia Madge, A.B. '07, University of Kansas, <i>History, Latin</i> ,	Lawrence.
Woodin, Abbie, A.B. '03, University of Kansas, <i>English, German</i> ,	Iola.
Zurcher, Rose Frances, A.B. '07, University of Kansas, <i>European History, Education, Sociology</i> ,	Newton.

GRADUATES, 102.

THE COLLEGE.

SENIORS.

Andrews, Laurin Lundy,	Abilene.
Angney, Haughey Harry,	Lawrence.
Angney,* Urbin R.,	Lawrence.
Babb, Carolyn Isabel,	Wichita.
Barrows, Raymond,	Lawrence.
Barteldes, Otto August,	Lawrence.
Bigham, Alvin,	Lawrence.
Bingler, Ola,	Lawrence.
Black, John Lee,	Lawrence.
Blakey, Eleanor,	Pleasanton.
Bohannon, Gaines Bailey,	Lawrence.
Branch, Hazel Elizabeth,	Wichita.
Brewster, Frances,	Thayer.
Brock, Gertrude,	<i>Excelsior Springs, Mo.</i>
Burnham, Lucia,	Lawrence.
Carpenter, Clara,	Lawrence.
Case, Norman Curtis, jr.,	Highland.
Clark, Genevieve,	Lawrence.
Cook, Robert Roy,	Clay Center.
Cooke, Sidney K.,	Leavenworth.
Crotinger, William,	Bison.
Crumb, Ebb S.,	Galena.
Daum, Verna,	St. Marys.
DeMoss, Edith Susanna,	Thayer.
Dolbee, Cora Emmett,	Lawrence.
Duer, Guy Robert,	Nickerson.
Eastman, Oscar F.,	Lawrence.
Ergenbright, Mabel Sanford,	Independence.
Eveland, Helen Vaughan,	<i>Kansas City, Mo.</i>
Fisher, Thekla Adolphia,	Lyons.
Funk, Neva F.,	Iola.
Ganoung, Edwin Grant,	Cawker City.
Gibson, Edward Thomas,	Kansas City.
Gillispie, Cary Blakey,	Cherryvale.
Glenn, Janet,	Paola.
Goodwin, Edith Anna,	Detroit.
Griesa, William Stevens,	Lawrence.
Guthrie, William Guy,	Irving.
Haskett, Ivy,	Concordia.
Heeney, Georgette,	Severance.
Hess, John Ambrose,	Lawrence.
Heuser, Chester Henry,	Fort Scott.
Hill, Benjamin Samuel,	Walnut.
Hill, John Walter,	Eudora.
Holmes, Clarence Price,	Emporia.

* Deceased.

SENIORS—*continued.*

Hovey, Wallace Franklin,	Hiawatha.
Hyndman, Henry Finlay,	Lawrence.
Ice, E. Ellen,	Lawrence.
Ingleman, Anna,	Lawrence.
Ise, John E.,	Downs.
Jacobs, Elmer Woodie,	Topeka.
Jones, Hal,	Iola.
Kent, Mattie,	Lawrence.
Kohman, Henry A.,	Dillon.
Lane, Lanorah Sophia,	Lawrence.
Laptad, Evadne Marie,	Lawrence.
Lasley, Katharine,	Kansas City.
Leary, Sarah Ellen,	Lawrence.
Lenig, Olive Amelia,	Lawrence.
Long, Carrie,	Lawrence.
Madden, Pauline,	Mound City.
Maffet, Maud A.,	Lawrence.
March, George Miles,	Lawrence.
Markley, Lola Ethel,	Lawrence.
Mathewson, Maude,	Highland.
Maughlin, Mary Belle,	Lawrence.
Miller, Milton Bradford,	Osage City.
Miller, William Jesse,	Osage City.
Mitchum, Lillie,	Atchison.
Moodie, Hubert,	Lawrence.
Moody, Rebecca,	Lawrence.
Morgan, Edwin Clyde,	Clay Center.
Morrow, Ernest L.,	Arkansas City.
McCleverty, Adelbert D.,	Lawrence.
McDaniel, Eugenia,	La Crosse.
McReynolds, Samuel A.,	Lawrence.
Osmond, Margaret R.,	Great Bend.
Pemberton, Ralph Brock,	Emporia.
Pendleton, Claudia Clara,	Lawrence.
Petit, Julian Cæsar,	Walnut.
Petit, William D.,	Walnut.
Phenicie, Ruth Ethel,	Reno.
Pickens, Minnie Laura,	Lawrence.
Pinney, Mary Edyth,	Wilson.
Pratt, Wallace E.,	Phillipsburg.
Rankin, Madonna Alice,	<i>Albuquerque, N. M.</i>
Rauch, Esther M.,	Topeka.
Ray, Robert Jackson,	Sterling.
Rhodes, Maude Olive,	Dodge City.
Riesen, Emil Richert,	Hillsboro.
Rinehart, Blanche Elvena,	Lawrence.
Root, Burton,	Lawrence.
Rutledge, Lyman Vincent,	<i>Alva, Okla.</i>
Schloz, Katharine,	Argentine.
Schmidt, Mary Wilhelmina,	Humboldt.
Sears, Burton Peabody,	Lawrence.

SENIORS —concluded.

Shaffer, Susie,	Hays.
Shearer, Nellie Kathleen,	Lawrence.
Shelby, Ada Catherine,	Lawrence.
Sheldon, Clarence Milton,	Ottawa.
Sheridan, Bernard Long,	Paola.
Siceloff, David Guy,	Lawrence.
Smith, Cecil,	Beloit.
Smith, Charles Augustus,	Lawrence.
Smith, Helen Beach,	Nickerson.
Smith, Henry Hume,	Stockton.
Snyder, Lucie Hortense,	Hays.
Steele, Hattie Elizabeth,	Belvoir.
Stone, Rosalia Rachel,	Walton.
Stroud, John Earl,	Howard.
Swan, Clifford Howard,	Pittsburg.
Teall, Raymond Edwin,	Oberlin.
Templin, Alice,	Lawrence.
Turner, Edith Alice,	Colony.
Van Cleave, Thomas M.,	Kansas City.
Virmond, Mary Elizabeth,	Hays.
Wallace, May V.,	Lawrence.
Walters, Gertrude Marlan,	Horton.
Wilcox, Winifred Mabel,	Concordia.
Wilhelmi, Alwine,	Lawrence.
Young, Carl Henry,	Portland.

SENIORS, 121.

JUNIORS.

Alexander, Winifred Davis,	Chanute.
Allen, Annie Keith,	Independence.
Apel, Elizabeth,	Marion.
Apollo, Otto,	Fredonia.
Asher, Alice Margaret,	Lawrence.
Ayers, Nola M.,	Horton.
Baldrige, Jessie,	La Junta, Colo.
Barry, Bernese Loretta,	Lawrence.
Bartholow, Edmond Montgomery,	Williamsburg.
Bass, Mary Lenore,	McPherson.
Bennett, Ethel Vale,	Iola.
Brobst, Myrtle Ada,	Osborne.
Brown, Guy Leroy,	Sabetha.
Buck, Lucy Hayes,	Lawrence.
Burdick, William Leroy,	Lawrence.
Burnett, Clanrold A.,	Girard.
Busch, Fred Fernley,	Junction City.
Butcher, Angie L.,	Sedan.
Butcher, John Towner,	Sedan.
Cambern, Fred Jessup,	Erie.
Campbell, Watson,	Attica.
Carter, Frances,	Lawrence.
Chesky, Victor Ernest,	Nickerson.

JUNIORS—*continued.*

Clarke, Adah Alberta,	<i>Sioux Falls, S. D.</i>
Clay, Claude Alfred,	Nickerson.
Coe, Jessie May,	Lawrence.
Collins, Grace Manifold,	Lawrence.
Copley, Gertrude Edith,	<i>Kansas City, Mo.</i>
Copper, Francis LeRoy,	Cherokee.
Cunnick, Irene,	Lawrence.
Davis, Philip L.,	Lawrence.
Eggleston, Mabel,	<i>Kansas City, Mo.</i>
Eson, Myra Gertrude,	Kingman.
Evans, Albert Steele,	Kansas City.
Everett, Nellie May,	Fort Scott.
Faragher, Paul Vance,	Sabetha.
Fay, Roland Cecil,	Olathe.
Foraker, Dora,	Wellington.
Galloway, Milton Blythe,	Wa Keeney.
Gill, Mabel Ruth,	Clyde.
Glenn, Olive,	Paola.
Graham, Grace D.,	Altoona.
Greenlees, Agnes,	Lawrence.
Gregg, Ernest Earl,	Lawrence.
Hall, Earl C.,	Lawrence.
Hall, Eleanor,	<i>Kansas City, Mo.</i>
Hall, Maude Laura,	Paola.
Hanson, Agnes Caroline,	Lawrence.
Healy, Lulu May,	Topeka.
Herman, Harold C.,	Reserve.
Hiatt, George Robinson,	Lawrence.
Hosford, Ruby Cornelia,	Lawrence.
Houston, Jessie Nelle,	Wichita.
Hunzicker, Lena,	Lawrence.
Jackson, Addie,	Lawrence.
Johns, Floyd Marion,	Glasco.
Johnson, Ralph Charles,	Lawrence.
Johnston, Mary Helen,	Lawrence.
Keneaster, Elizabeth Fay,	Lawrence.
Kilpatrick, Rollo Raymond,	Quenemo.
Krehbiel, August R.,	Lawrence.
Leonard, Louise Upton,	Lawrence.
Leslie, Grace Mease,	Lawrence.
Livengood, Fay Emmet,	Hutchinson.
Livers, Arnold F.,	Esbon.
Long, Octavia Cornelia,	<i>Hot Springs, Ark.</i>
Loomis, Blanche,	Fredonia.
Lorig, Marx Liepold,	Oberlin.
Luckan, Bertha Gustav,	Lawrence.
Lyon, Fred M.,	Paola.
Manley, Alma Theodosia,	Junction City.
Maughlin, Emma Etta,	Lawrence.
Merstetter, Amy,	Kansas City.
Mitchell, Hattie Florence,	Neodesha.

JUNIORS—concluded.

Mitchell, Zella,	Wellington.
Mosher, Guy E.,	Parsons.
McCarty, Virgil Warner,	La Harpe.
McCurdy, Mildred,	Lawrence.
McKelvy, Esther,	Barnes.
McLenon, William Neal,	Everest.
McNaughton, Alicia,	Tonganoxie.
McNutt, Dora,	Eureka.
Naramore, Archie Pond,	Wichita.
Nevens, Thomas Arthur,	Garnett.
Norman, Martha Jane,	<i>Kansas City, Mo.</i>
Parker, Mary Elizabeth,	Lawrence.
Peard, Roger Wood,	<i>Enid, Okla.</i>
Perkins, Lola May,	Lawrence.
Phillips, Ruby,	Burlingame.
Powell, Fred C.,	Nickerson.
Powell, May T.,	Leavenworth.
Prunty, Merle Charles,	Wellington.
Pryor, Ralph James,	Lawrence.
Radell, Teresa Clara,	Pittsburg.
Roberts, Roy Allison,	Lawrence.
Ross, Thomas Cornelius,	Olathe.
Royer, Clifford Fry,	Abilene.
Rummell, Charles,	Wichita.
Schmitz, Minta,	Paola.
Schwinn, John Morton,	Wellington.
Shea, John Penfield,	Lawrence.
Shipley, Carolyn Hattie,	Belleville.
Smart, Georgia Ethel,	Ottawa.
Smart, Lola Lucille,	Ottawa.
Smith, Clara Gertrude,	Cameron.
Smith, Verni L. C.,	Colby.
Spilman, Marion A.,	McPherson.
Spray, Lester E.,	Lawrence.
Steeper, Hubert de Tinsley,	Lawrence.
Sterling, Eugenie,	Lawrence.
Thomas, Nadia Venita,	Lawrence.
Thompson, Fred Marion,	Herington.
Thompson, Herbert,	Edwardsville.
Tyler, Frank Edwards,	Clifton.
Waters, Henry Clay,	Galena.
Wattles, Willard Austin,	Bayneville.
Weaver, Amaretta Bullene,	Lawrence.
Weidlein, Edward Ray,	Augusta.
White, Rachel,	Delphos.
Wiedemann, W. Edward,	Lawrence.
Williams, Bertha Juanita,	Lawrence.
Williams, Lillie H.,	Lawrence.
Wilson, Kathryn Marie,	Lawrence.
Wright, Lucy Jennie,	Lawrence.

SOPHOMORES.

Abraham, Lillian Leland,	Kansas City.
Alford, Katheryne Sylvia,	Lawrence.
Allison, Hazel,	Clay Center.
Armstrong, Charles Elliot,	<i>Watonga, Okla.</i>
Axtell, Marguerite,	Newton.
Bailey, Reginald King,	Lawrence.
Baird, Brownlee E.,	Centralia.
Banker, Edward Cleveland,	Overbrook.
Barkdull, Charles Leon,	Lawrence.
Barnett, Edith Edna,	<i>Kansas City, Mo.</i>
Barnhill, John Firmen,	Paola.
Barton, Isabel,	Kansas City.
Beard, Archie H.,	<i>La Junta, Colo.</i>
Beauchamp, Queena Alice,	Holton.
Beckwith, Amy Clapp,	Hiawatha.
Bedell, Grace Davida,	Iola.
Beerbohm, Margaret Holmes,	Topeka.
Bernhard, Eva Charlotte,	Lawrence.
Betts, Sibyl Dodona,	Lawrence.
Billings, Roy Egbert,	Cherryvale.
Blackmar, Winifred Margaret,	Lawrence.
Blair, Alice,	Lawrence.
Bond, Jay,	Lawrence.
Bosse, Milton August,	Ellinwood.
Bossi, Vincent Volta,	Arkansas City.
Bozell, Leo Brent,	Beloit.
Breidenthal, Maurice L.,	Kansas City.
Brownlee, Elizabeth Esther,	Lawrence.
Bruce, Olive Malinda,	Clay Center.
Bullen, Benjamin Talmadge,	Belleville.
Burnham, Nellie,	Lawrence.
Burtis, Harry James,	Waterville.
Cahill, Leslie,	Lucas.
Calderhead, Iris Gallant,	Marysville.
Carpenter, Juliet,	Lawrence.
Carson, Lenore,	Dodge City.
Case, Hattie Elizabeth,	Arkansas City.
Clarke, Erminie Ethel,	Lawrence.
Cole, Clifford,	<i>Kansas City, Mo.</i>
Connelly, Judith Mary,	<i>Kansas City, Mo.</i>
Converse, Clara Lillian,	Burlington.
Cook, Ward Hance,	<i>Kansas City, Mo.</i>
Cooley, C. Edwin,	Kansas City.
Corwine, Edgar Glenn,	Mulvane.
Craig, Ivy Eliza,	Kansas City.
Cressman, Edmund Dresser,	Lawrence.
Crooker, Arthur Clyde,	Anthony.
Culp, Muriel,	Salina.
Curtis, Paul Everard,	Almena.
Dean, Imogen,	Marion.
Demand, John Wesley,	Chapman.

SOPHOMORES—*continued.*

Demand, Milton Henry,	Chapman.
Dietrich, Roy Kaiser,	<i>Kansas City, Mo.</i>
Dillard, Lucile Lillian,	Fort Scott.
Disney, Lester,	Sedan.
Dodderidge, Henry Alfred,	White City.
Earl, Edith,	Newton.
Eddy, Carl Gates,	Colby.
Elmore, Clarence A.,	Holsington.
Evans, Agnes Louise,	Lawrence.
Fenner, Hattie,	Humboldt.
Finney, Guy,	Wamego.
Fitzsimons, William T.,	<i>Kansas City, Mo.</i>
Flack, Frank LeRoy,	Longton.
Fones, Cory Keene,	Lyons.
Fort, Margaret McCreery,	<i>Kansas City, Mo.</i>
Frey, Elsbeth Sophia,	Enterprise.
Fridley, John B.,	Alma.
Froelich, Jonathan Fred,	Enterprise.
Fullenwider, Marcus Edwin,	El Dorado.
Gafford, Edna May,	Minneapolis.
Gilmore, Eleanor Margaret,	Lawrence.
Graham, Helen,	Holton.
Graves, Nellie Marjorie,	Beloit.
Gray, Franc Elizabeth,	Lawrence.
Green, Amy Maria,	<i>Kansas City.</i>
Haddock, Fred Theo.,	Rosedale.
Hague, Edith Elizabeth,	Lawrence.
Hanna, G. Dallas,	Lawrence.
Harbeson, John Wesley,	Lawrence.
Harlan, Harold Eugene,	Downs.
Harman, Ralph,	Cottonwood Falls.
Harvey, May Lyndel,	Council Grove.
Harvey, Paul Winter,	Columbus.
Hawkinson, Amos Edward,	Marquette.
Henrichs, Bessie Annetta,	Humboldt.
Hill, Theodore Grover,	Pittsburg.
Hinkson, Guy Giddings,	Halstead.
Hobbs, Wilber Abram,	Lawrence.
Hogue, Lillah Eveline,	Spring Hill.
Hollingsworth, Pearl Evangeline,	Independence.
Hopkins, Edna Pierson,	Topeka.
Hornaday, Grace Belle,	Lawrence.
Houston, Alice Owen,	Wichita.
Huff, William Manly,	Chapman.
Hull, Blanche Edith,	Lawrence.
Hurst, Letha,	Garden City.
Hyre, Edna Marle,	Lawrence.
Johnston, Edward Clyde,	Cottonwood Falls.
Jones, J. Wilbur,	Louisburg.
Karr, Aline Alice,	Howard.
Katherman, Maude Blanche,	Lawrence.

SOPHOMORES—*continued.*

Keith, B. Ashton,	Howard.
Kenney, Ruth,	Lawrence.
Kenny, Gertrude Agnes,	Columbus.
Klein, Edward George,	Kingman.
Laird, Elizabeth Lucia,	<i>Kansas City, Mo.</i>
Land, William McElroy,	Fort Scott.
Larmor, Wilson Charles,	Garden City.
Lasley, Pearl,	Kansas City.
Lawrence, Emilie G.,	Ottawa.
Lee, Thomas Armory,	Topeka.
Leonard, J. Clifford,	<i>Kansas City, Mo.</i>
Lindsey, Lola Eleanor,	Cherryvale.
Lindsey, Ray Duncan,	Cherryvale.
Lobaugh, Paul Mateer,	Harper.
Long, Maggie-Belle,	Lawrence.
Loofbourrow, Elmer Ray,	Wellington.
Lowe, Cornelius Olos,	Lawrence.
Lupton, Margaret Edna,	Hoxie.
Marshall, Rachel,	Lincoln.
Martin, Helen Hamilton,	Kansas City.
Martindell, Donald Cameron,	Eureka.
Mervine, James Frederic,	<i>Kansas City, Mo.</i>
Mervine, Marian,	<i>Kansas City, Mo.</i>
Middlekauff, Ralph H.,	Wichita.
Miller, Hattie Beecher,	Kansas City.
Miller, J. Earll,	Marysville.
Mitchell, Nelle,	Robinson.
Myers, Edith Sara,	Lawrence.
McCleverty, Josephine,	Lawrence.
McCoy, Anna Elizabeth,	Hiawatha.
McElfresh, Jessie Lee,	Osage City.
McNeely, Paul P.,	Cedarvale.
Nelson, Claire Marie,	Leavenworth.
Newbold, Cecil Leslie,	Rosedale.
Noftzger, Millicent Fisher,	Anthony.
Nolder, Helen Alletta,	Newton.
Nugent, Goldwin Inch,	<i>Briggs Corner, Canada.</i>
Nutter, Frank Clark,	<i>Kansas City, Mo.</i>
Ogden, Floyd Price,	Cherryvale.
Ogden, Raymond Clifton,	Lawrence.
Osborn, Walter Manning,	Waverly.
Otto, Chester L.,	Coffeyville.
Overstreet, Maria Leone,	Blue Rapids.
Pearson, Margaret,	Wakefield.
Peck, Arthur S.,	Garnett.
Penn, Pertilla,	Atchison.
Penny, Charles Elmore,	Lawrence.
Perkins, Lillian Pearl,	Lawrence.
Perkins, Rollin M.,	Lawrence.
Pierson, Ralph Laurence,	<i>Fresno, Calif.</i>
Poe, Edna Anna,	Lawrence.

SOPHOMORES—*continued.*

Poindexter, Marlin Hatfield,	Kansas City.
Potwin, Ross William,	Lyons.
Power, John Byron,	Lawrence.
Quiring, Walter Otto,	Newton.
Rankin, Juanita Gertrude,	<i>Albuquerque, N. M.</i>
Rarig, Bessie Mabel,	Minneapolis.
Ravenscraft, Ruby,	Ashland.
Riste, Faye Margaret,	Norton.
Robb, Mina Richie,	Salina.
Roberts, Morris M.,	Great Bend.
Robertson, Flavel,	<i>Kansas City, Mo.</i>
Rogler, Adaline C.,	Cottonwood Falls.
Satterthwaite, Mary Ridgway,	Girard.
Sawtell, Helen Ermina,	Junction City.
Schauffler, Edward Reynolds,	<i>Kansas City, Mo.</i>
Schnacke, Mary Ruth,	Topeka.
Scott, Helen Elizabeth,	Leavenworth.
Shannon, T. Theodore,	Mound City.
Shaw, Laurenia Mervine,	Lawrence.
Sheffer, Viola Florence,	Linwood.
Sheppard, James Gifford,	Fort Scott.
Singleton, Harry,	Benedict.
Slade, Elsie,	Clay Center.
Smith, Katharine O'Donnell,	Stockton.
Smith, O'Connor Cleveland,	Lawrence.
Spotts, Ralph Hall,	Abilene.
Stephens, Elizabeth,	Lawrence.
Steven, Laurene,	Lawrence.
Steward, William Abbott,	Columbus.
Stolbert, James Albion,	<i>Kansas City, Mo.</i>
Stough, Martha,	Lawrence.
Strong, George Albert,	Gove City.
Stryker, William Lester,	Fredonia.
Stuckey, Pearl Mabelle,	Formoso.
Studd,* Leo Henry,	Glasco.
Sutton, Gail Theresa,	Lyons.
Teeter, Edna Pearl,	Lawrence.
Terrill, Olive Elizabeth,	Lawrence.
Thestrup, Grace Elizabeth,	Williamsburg.
Turner, Francis Marion,	Clifton.
Webb, Joseph Calvin,	Peabody.
Wenger, Joseph Sylvester,	Russell.
Wetmore, Frank Alexander,	Lawrence.
Wheeler, Mary Strever,	<i>Kansas City, Mo.</i>
Wilburn, Homer Vernon,	Independence.
Williams, Bertha Hortense,	Oswego.
Williams, Mary Catherine,	Herington.
Wohler, Paul Reinhard,	Chanute.
Woodward, Earl Cool,	Glasco.

*Deceased.

SOPHOMORES—*concluded.*

Wright, Cowles,	Arkansas City.
Young, Winifred,	Lawrence.
Zurcher, Blanche Anna,	Newton.

SOPHOMORES, 206.

FRESHMEN.

Allcutt, Rowena,	Lawrence.
Ames, Helen,	Topeka.
Amsden, Edgar,	Wichita.
Amsden, Forest W.,	Wichita.
Andrews, Vernon Milo,	Powhattan.
Bacher, Albert J.,	Clay Center.
Bacher, Alva,	Clay Center.
Baer, Milton David,	Beloit.
Baer, Roy Harrison,	Ransom.
Bailey, Verne Dare,	Mankato.
Baird, Spencer Lawrence,	Dodge City.
Baker, Warren Vernon,	El Dorado.
Bandel, Clarence Alexander,	Wamego.
Barnett, William Quay,	Lawrence.
Barrett, Wilhelmina,	Frankfort.
Batchelor, James Harold,	Valley Falls.
Baum, Orla Rey,	Phillipsburg.
Baumgartner, Edwin A.,	Lawrence.
Bedell, Florence Jasa,	Iola.
Benson, Inez,	El Dorado.
Berger, Homer Hecker,	Kansas City.
Bigelow, Howard C.,	Gardner.
Bishop, Beulah Irene,	Delphos.
Blackmar, Gertrude,	Lawrence.
Blair, Streeter,	Spring Hill.
Bodle, Marjorie Louise,	Meade.
Boughton, George Wilson,	Fort Leavenworth.
Bradley, John,	Wellington.
Bradley, William Harry,	El Dorado.
Brain, Horace,	Pittsburg.
Bray, Edgar Ware,	Syracuse.
Bray, Frank,	Clifton.
Brewer, Almeda,	Centralia.
Breyfogle, Lewis William,	Chanute.
Briggs, Iola Ruby,	Milo.
Brooks, Martin Kahao,	Lawrence.
Brown, Carl,	Norton.
Brown, Ethel,	Burlington.
Brown, Mary Ethel,	Lawrence.
Brown, Reuben Henry,	Quindaro.
Brown, Roy Wilson,	Centralia.
Brownlee, Harold Joseph,	Sterling.
Bruckmiller, Frederick,	Kansas City, Mo.
Burdick, Helen Salisbury,	Lawrence.
Calene, Leona Camilla,	Sylvan Grove.

FRESHMEN —continued.

Callaway, Kathleen Margaret,	Greenleaf.
Campbell, Paul,	Coffeyville.
Carothers, Estella Eleanor,	Cleveland.
Carson, Paul C.,	Ashland.
Casey, Lee Taylor,	Kansas City, Mo.
Clark, Edgar J.,	Kansas City, Mo.
Clark, Hal LaSalle,	Ottawa.
Coe, John Parks,	Topeka.
Cole, Alma,	Lawrence.
Connelly, Joseph Hays,	Carthage, Mo.
Cooper, Fred Brown,	Newton.
Coors, Mary Katherine,	East Las Vegas, N. M.
Cornell, Stella N.,	Great Bend.
Costello, Leonard H.,	Hobart, Okla.
Cox, Gladys Violet,	Chanute.
Cramer, J. Frank,	Gardner.
Cravens, Lucile Starr,	Kansas City, Mo.
Crego, Lura Agnes,	Burlington.
Critchfield, Tess,	Oskaloosa.
Cross, Gurnee,	Walnut.
Cupp, Charles D.,	Lawrence.
Dale, La Vergne,	Lawrence.
Dalton, William B.,	Lawrence.
Darrough, John Niven,	Kansas City.
David, Bessa Allathea,	Bonner Springs.
Detwiler, Eva Viola,	Smith Center.
Dingelstedt, Minnie Augusta,	Lawrence.
Dolbee, Carrie,	Lawrence.
Doty, Andrew Claude,	Hoisington.
Douglas, Ethel,	Crestline.
Draper, May,	Lawrence.
Eastman, Walter Maynard,	Lawrence.
Edgerton, Edna Melissa,	Randolph.
Edmonds, Letha May,	Lawrence.
Elliott, Harry,	Lawrence.
Ellis, Mayme Isabell,	Cherryvale.
Emery, Walter Titus,	Lawrence.
Evans, Mabel,	Hiawatha.
Ewers, Leland,	Sedan.
Fairchild, Charles Clement,	Kingman.
Farber, Minnie,	Hoxie.
Farnham, Demo,	Galena.
Fincke, Amanda,	Rosedale.
Fincke, Bertha,	Rosedale.
Fincke, Julius,	Rosedale.
Fischer, Earl Morton,	Wamego.
Fisk, Carroll Page,	Morrisville, Vt.
Flummer, Minnie Allena,	Eureka.
Foster, Neva June,	Lawrence.
Fraser, Nettie May,	Belleville.
Friedman, Moe Lester,	Kansas City, Mo.

FRESHMEN—*continued.*

Fuller, Lottie Moylan,	Fort Leavenworth.
Gephart, Jesse T.,	Oskaloosa.
Gibson, Admud Jennings,	McCune.
Gift, Ada,	Smith Center.
Gillock, Pearl,	Fort Scott.
Gordon, May Virgil,	Fort Scott.
Gorsuch, Harris Foster,	Sharon Springs.
Goudy, Harry W.,	Beloit.
Greene, Hilda,	<i>Kansas City, Mo.</i>
Greenough, Lulu,	Wilson.
Griesa, Edna Elizabeth,	Lawrence.
Griffin, Edward Lawrence,	Lawrence.
Hackbusch, Dorothea,	Leavenworth.
Hague, Florence Sander,	Lawrence.
Hamilton, Harry,	Columbus.
Hardwick, Mabel Clair,	Galena.
Harper, Leta Maud,	Lawrence.
Haverkamp, William,	Lawrence.
Hawkinson, Milton Paul,	Marquette.
Hayden, Carol Fales,	<i>Kansas City, Mo.</i>
Heavey, Elizabeth,	Leavenworth.
Hell, George Nelson,	Wamego.
Hell, John Sidney,	Wamego.
Heizer, Robert Stoufer,	Osage City.
Hellwig, Aline Katherine,	Oswego.
Hemphill, James Albert,	Lawrence.
Hipple, Frank Eugene,	Hutchinson.
Hoach, Belle Ivy,	Elk Falls.
Hoar, Charles Parke,	Linwood.
Hodgson, Ruth Lillian,	Lawrence.
Hofman, Arnold,	<i>Kansas City, Mo.</i>
Holsington, Stanley Milo,	Newton.
Holmes, Benjamin George,	Blue Rapids.
Houghton, Katherine Olive,	Cottonwood Falls.
Howat, Bertha Irene,	Plainville.
Howe, Charlotte Virginia,	<i>La Junta, Colo.</i>
Hughes, William Marshal,	Holton.
Hulburd, Dwight G.,	Lawrence.
Hull, Eva Pearl,	Lawrence.
Humphrey, Irvin Wesley,	Russell.
Hunt, Ruth E.,	<i>Kansas City, Mo.</i>
Hunzicker, Edna L.,	Lawrence.
Hutchison, Vera Ethel,	Wilson.
Iles, Ned E. W.,	Olathe.
Jackson, Ola,	<i>Kansas City, Mo.</i>
Jenkins, Bessie,	Galena.
Jenkins, Rue William,	Oskaloosa.
Jennings, Claude Stuart,	<i>Kansas City, Mo.</i>
Johnson, Alice,	Oskaloosa.
Johnson, Delpha Victoria,	Randolph.
Johnson, Jamesina Clark,	Topeka.

FRESHMEN —continued.

Johnson, Roy,	<i>Independence, Mo.</i>
Johnston, Edward Clyde,	Cottonwood Falls.
Johnston, Robert K.,	Lawrence.
Jolley, Frank,	Topeka.
Kanaga, Williamson Clinton,	Lawrence.
Kaull, Harry J.,	Beloit.
Keegan, Jay John,	Axtell.
Kellman, Earl David,	Lawrence.
Kenney, Charles Edward,	Mound City.
Ketchum, Pauline,	Lawrence.
Kiler, William Clyde,	Ottawa.
Kramer, Ruth Agnes,	Osage City.
Kreider, Charles Cottier,	Lawrence.
Krenz, Lois Anna,	Waverly.
LaCoss, Louis,	Lawrence.
Lamb, Chole Velma,	Dunlap.
LaShell, Eugene Maynard,	Ellis.
Layton, LeRoy Wilford,	Kansas City.
Lee, Fred Edward,	Columbus.
Lehman, C. Harvey,	Humboldt.
Leslie, Hazel,	Lawrence.
Lewis, David Charles,	Emporia.
Light, Grace,	Lawrence.
Lock, Maurice,	Manning.
Lohse, Emma M.,	Marysville.
Loomis, Alexander C.,	Topeka.
Lovejoy, Beryl Hana,	Atwood.
Lovejoy, Owen H.,	Lawrence.
Loveland, Amos Wagar,	Eureka.
Lovett, John Lamb,	Wellsville.
Lowe, David Lawrence,	Lawrence.
Luther, Ethel Grace,	Kansas City.
Madden, Marie Elizabeth,	Mound City.
Maple, Frank Fulton,	Garden City.
Markham, Orlean Edgar,	Washington.
Maughlin, Lenore Anna,	Lawrence.
Mavity, Della,	Lyndon.
Mering, Norma J.,	Great Bend.
Millard, Harry J.,	Hannibal.
Miller, Howard Preston,	Perry.
Miller, Grace L.,	El Dorado.
Miller, Marie Blanche,	Leavenworth.
Milligan, Harry,	Garnett.
Miner, Vern Edgar,	Burlingame.
Mitchell, Joe,	<i>Kansas City, Mo.</i>
Moeller, Thomas Otto,	Galena.
Mollison, Blanche,	Smith Center.
Moody, Herschel,	Oneida.
Moore, Leland W.,	Ottawa.
Moore, Oreta Elizabeth,	Lawrence.
Morris, Bertha Matilda,	Anthony.

FRESHMEN—continued.

Morris, Inez,	Tecumseh.
Mulford, Minott,	<i>Kansas City, Mo.</i>
Munson, Oliver Kenneth,	Lawrence.
Murphy, S. Will,	Gardner.
Musgrave, Samuel Curtis,	Humboldt.
McBride, Ernest Claire,	Independence.
McDonald, Lillian,	Wellington.
McElfresh, Myrtle,	Osage City.
McKnight, Ina Marian,	Parsons.
McMeel, Eugene James,	Meade.
McNitt, Ethel Pauline,	Washington.
Nees, Paul Bertram,	Independence.
Nesbitt, Charles Rudolph,	Garnett.
Nesbitt, W. Frank,	Garnett.
Neylon, Claribel,	Paola.
Nicolet, Ben Harry,	<i>Kansas City, Mo.</i>
Norris, George Ray,	Burdett.
Noyes, Mayrea,	<i>Portsmouth, Va.</i>
Overman, L. Elbert,	Lawrence.
Palmer, Thomas P.,	Wamego.
Park, Stephen Alan,	<i>Lund, S. D.</i>
Parker, Clyde Templeton,	Lafayette.
Patterson, Curtis John,	Oskaloosa.
Patterson, Joseph M.,	<i>Kansas City, Mo.</i>
Payne, Theodore Edgar,	Larned.
Peck, David Perley,	Kingman.
Pepperell, William E.,	Concordia.
Perkins, Henry,	Lawrence.
Perkins, Roy Joseph,	Burlingame.
Pettit, Fred E., Jr.,	Peabody.
Phillips, Alta Edan,	Lawrence.
Phillips, Helen Tenney,	Lawrence.
Phipps, Nema,	Lawrence.
Pleasant, Eunice,	Lyndon.
Poindexter, Mildred Hatfield,	Kansas City.
Polack, Mary,	Marysville.
Porter, Eliot,	Kansas City.
Pratt, John W.,	Phillipsburg.
Rankin, Dessa Anna,	Lawrence.
Raymond, Alice,	Hiawatha.
Reding, Henry Warren,	Lawrence.
Reed, B. Beatrice,	Glasco.
Reighard, DeEtte,	Dodge City.
Reynolds, James Dryden,	Lyons.
Richardson, George Crosier,	Lawrence.
Richardson, Lorraine Alberta,	Kansas City.
Ricketts, Wanda Louva,	Sedan.
Ridenour, Ella Bow,	Emporia.
Rowe, Verna Jena,	Wilson.
Rufener, Louis A.,	Abilene.
Russell, Edith Mills,	Lawrence.

FRESHMEN—*continued.*

Russell, Lettie Grace,	Lawrence.
Salthouse, Wirt C.,	McPherson.
Sapp, Marienne,	Galena.
Saunders, Pauline H.,	Lawrence.
Sawyer, Lewis M., jr.,	Norton.
Schilling, Helen I.,	Hiawatha.
Searles, Lloy Benjamin,	Parsons.
Sellards, Bertha,	Lawrence.
Shaner, Mary Pauline,	<i>Chicago, Ill.</i>
Shannon, Robert,	Kansas City.
Shippy, Ada,	Chapman.
Shreve, Emma Maria,	Atchison.
Siegel, Margaret,	<i>Kansas City, Mo.</i>
Simon, Clyde E.,	Anthony.
Simmon, William Ebert,	Garnett.
Sippy, Benjamin F.,	Belle Plaine.
Small, Edward Lorenzo,	Cottonwood Falls.
Smith, Helen L.,	Iola.
Smith, James Gilliland,	Anthony.
Smith, Jean Eleanor,	Lawrence.
Smith, John T.,	Lawrence.
Smith, Lewis Benedict,	<i>Ogden, Utah.</i>
Smyth, Jessie Miriam,	Eureka.
Spray, Ruth Gladys,	Lawrence.
Steeper, Gladys Lucile,	McLouth.
Steven, Effie S.,	Lawrence.
Stevens, George T.,	Coffeyville.
Stevens, Lois Elizabeth,	Lawrence.
Stewart, John Thomas,	Wellington.
Stowell, Albert C., jr.,	<i>Kansas City, Mo.</i>
Streeter, Floyd Benjamin,	Hesston.
Stull, Marian Melcene,	Highland.
Swope, Harry,	Mankato.
Taber, Bernice May,	Holton.
Taylor, Thomas Richard,	Great Bend.
Terrill, Lena Charles,	Lawrence.
Theis, Ethel Mary,	Wichita.
Thomas, Nellie Georgia,	Kansas City.
Thompson, Clad Hamilton,	Howard.
Thompson, Vera,	Kansas City.
Thomson, Josephine,	Osage City.
Thornton, Ruby Clarke,	Atchison.
Troutman, Anna,	Topeka.
Turner, Robert Blaine,	Mankato.
Van Atta, John Robert,	Beloit.
Van Vliet, Elizabeth Hodson,	Frankfort.
Van Vliet, Winifred,	Frankfort.
Van Zandt, Russell Bacon,	Hutchinson.
Vernon, Joseph Stanton,	Larned.
Wade, Ray Scottie,	<i>McAlester, Okla.</i>
Warkentin, Jacob K.,	Hillsboro.

FRESHMEN—concluded.

Watkins, Mabel Olive,	Lawrence.
Weaver, Harry,	Belleville.
Weil, Marie,	<i>Las Animas, Colo.</i>
Wenrich, Christine Frances,	Lawrence.
Wenrich, David Henry,	Lawrence.
West, Martha,	Garnett.
White, Benjamin,	Ada.
White, Edwin Clay,	<i>Kansas City, Mo.</i>
Wightman, Wade Walter,	Wichita.
Wilhelm, Louis Robert,	Lawrence.
Wilhelm, Ruth Elizabeth,	Lawrence.
Williams, Anna Elizabeth,	Clay Center.
Williams, Daisy Lucile,	Osage City.
Williams, Waldine,	Kansas City.
Willis, Edith Mary,	Lawrence.
Wilson, Bernice Elena,	Concordia.
Wilson, Lucy Elizabeth,	Iola.
Withers, Raymond,	Valley Falls.
Woodman, Lula,	Netawaka.
Work, Roy Yarger,	Ellsworth.
Yates, Josephine Silone,	<i>Kansas City, Mo.</i>
Yeoman, Don Orel,	Kingman.
Young, Martha Lois,	Moran.
Zook, Nettie,	Fort Scott.
Zoellner, Leslie Raymond,	Tonganoxie.

FRESHMEN, 325.

SPECIALS.

Allendoefer, Maurice,	Concordia.
Armstrong, Harry Alexander,	<i>Kansas City, Mo.</i>
Bailey, Lois Maurine,	Lawrence.
Baird, Charles Glenn,	Lawrence.
Barrett, George Gordon,	Westmoreland.
Bartels, Martha,	Inman.
Beatty, Jerome Griswold,	Lawrence.
Benner, Amy Mildred,	Peru.
Bischoff, George D.,	Washington.
Blacker, Morris A.,	Kansas City.
Blaylock, Julia,	Smith Center.
Bond, Rosa,	Lawrence.
Bowers, Benjamin F.,	Centropolis.
Briggs, Frank William,	Lawrence.
Brinkerhoff, Fred Walter,	Ottawa.
Brookens, Mrs. Flora R.,	Smith Center.
Burkholder, Virginia Lutie,	Fort Scott.
Cannon, J. Emma,	Lawrence.
Carroll, Charles L.,	Great Bend.
Childers, Nellie M.,	Sedan.
Cramer, Fern,	Lawrence.
Dershew, Lincoln,	Baldwin.
Devereux, Josephine F.,	<i>Salt Lake City, Utah.</i>

SPECIALS—continued.

Douglas, Richard Leroy,	Crestline.
Douglass, William,	Lawrence.
Draper, Henry Fenton,	Oswego.
Driebebis, Lillian,	Sabetha.
Ducker, Florida Clare,	Joliet, Ill.
Durham, Hugh,	Lawrence.
Earhart, Allen Birdsey,	Oxford.
Eddy, Bertha,	Lawrence.
Elmore, Grace Martin,	Tecumseh.
Elting, Kate Hardenbergh,	Ness City.
Emery, Marguerite,	Lawrence.
Evans, Esther Preston,	Lawrence.
Farney, Mrs. Hayden Mercedes,	Kansas City, Mo.
Finerty, Helen,	Oklahoma City, Okla.
Forde, Edgar M., jr.,	Emporia.
Frickelton, Frank Scott,	Joplin, Mo.
Gano, Maud Virginia,	Great Bend.
Gilmore, Mary Etta,	El Dorado.
Grant, Eugene W.,	Emporia.
Greenfield, Myrtle,	Sabetha.
Greenough, Lulu,	Wilson.
Hale, Arthur E.,	Oronoque.
Hall, Hazel Louise,	Eureka.
Harris, George I.,	Lawrence.
Haslam, Thomas Powell,	Council Grove.
Hawk, Ann Nixon,	Lawrence.
Healey, Florence,	Lawrence.
Hearn, Nadine,	Kansas City, Mo.
Hemenway, Ralph G.,	Emporia.
Hill, Frank Mulford,	Lawrence.
Hill, Helen,	Oswego.
Howard, Ethel May,	Washington.
Hudson, Nell Kent,	Lawrence.
Hull, Oscar C.,	Potwin.
Ise, Hulda Lucile,	Downs.
Kell, Joseph F.,	Shields.
Kelley, James Adrian,	Kinsley.
Kemp, Harry H.,	Lawrence.
Kennedy, Madge Mignon,	Fredonia.
Kenny, Ada Josephine,	Lawrence.
Kinnan, Herbert Lorraine,	Clay Center.
Krenz, Pauline Adelle,	Waverly.
Langley, Frank,	Olpe.
Loper, Cleveland Scott,	Norcatgur.
Lundin, Maud Elizabeth,	Columbus.
Manley, Lester Bryant,	Junction City.
Massa, Ruth M.,	Bethel.
Matkins, Lola Cecil,	Lawrence.
Mayer, Walter Cyrus,	Keats.
Mervine, Howard Edward,	Kansas City, Mo.
Michaels, Roy M.,	Horton.

SPECIALS—concluded.

Middlekauff, Casper Joseph,	Hays City.
Miller, Alice,	Lawrence.
Milton, Sidney McGarvey,	Lawrence.
Moses, Alice Lillian,	Great Bend.
Mott, Ethel B.,	Harper.
Mundell, Walter N.,	Lawrence.
Murray, Joseph W.,	Lawrence.
McCanles, Wendell Windom,	Lincoln.
Neal, Carolyn Nettie,	Topeka.
Osborn, Monroe,	<i>Pauls Valley, Okla.</i>
Overholt, Mary,	Topeka.
Owens, Celia May Daisly,	Lawrence.
Owens, Patrick Henry,	Earlton.
Padgett, Frederick Ward,	Fort Scott.
Paret, Howard,	<i>Kansas City, Mo.</i>
Parker, Clement Arthur,	<i>Kansas City, Mo.</i>
Parisho, Freedom Blanche,	Lawrence.
Perusse, Francis Joseph,	Lawrence.
Preston, Elsie,	Freeport.
Ramsey, Homer D.,	Lawrence.
Randall, Howard M.,	Newton.
Rankin, Harold Nelson,	Culver.
Ray, Anna West,	Wichita.
Raymond, Geneva,	Hiawatha.
Rutherford, Lucien Baker,	Leavenworth.
Shaw, Edna Lucile,	Wichita.
Sheldon, Mary Loraine,	<i>Stewartsville, Mo.</i>
Simpson, Edith R.,	<i>Perry, Okla.</i>
Sinclair, Janet Marie,	Lawrence.
Skelton, Wilbur H.,	Hutchinson.
Starbuck, Harvey,	Plainville.
Stephenson, Nellie,	Westphalia.
Tague, Edgar L.,	Lawrence.
Teachenor, Frank Randall,	<i>Kansas City, Mo.</i>
Teeters, J. Edward,	Lawrence.
Terrill, Mrs. Nellie C.,	Lawrence.
Thomas, Luther D.,	Emporia.
Thoroman, Albert M.,	Lawrence.
Wells, Don E.,	Erie.
White, Jesse Ruskin,	Mankato.
White, Sara Ford,	Ada.
Wilhelmi, Max F.,	Lawrence.
Wilkie, Grace,	Wichita.
Williams, Ralph Waldo,	Edgerton.
Winkler, Ada Mariam,	<i>Glenwood, Iowa.</i>
Wolfrom, Anna,	<i>Duluth, Minn.</i>
Wood, Eleanor,	Webber.
Worden, David Ernest,	Wellington.
Young, Everett Gillham,	Topeka.

SCHOOL OF ENGINEERING.

SENIORS.

Ahlborn, George H., E.E.,	Smith Center.
Ames, Loren, C.E.,	Downs.
Barnes, Luther, E.E.,	Lawrence.
Blackmar, Frank H., Min.E.,	<i>Kansas City, Mo.</i>
Bliss, Tulla Ethan, C.E.,	Oskaloosa.
Boynton, Charles Otis, C.E.,	Kansas City.
Bozell, Harold Veatch, E.E.,	<i>Kansas City, Mo.</i>
Broderson, Harry Peter, E.E.,	Lyndon.
Brown, Claude D., Min.E.,	<i>Des Moines, Iowa.</i>
Chapin, Charles Walter, C.E.,	Council Grove.
Coleman, Bond, Min.E.,	Mound City.
Copley, Everett, E.E.,	<i>Kansas City, Mo.</i>
Corp, Clifford, M.E.,	Hutchinson.
Cortelyou, Frank Morgan, C.E.,	Muscotah.
Coston, Alfred Taylor, Min.E.,	Fort Scott.
Coventry, Neil Sherman, Min.E.,	Fort Scott.
Davidson, J. Harry, Chem.E.,	Burlington.
Dodge, Allan Wayne, Min.E.,	Salina.
Donald, Prentiss Charles, C.E.,	La Harpe.
Dove, Frank, C.E.,	Chanute.
Dudley, Chandler, C.E.,	Independence.
Elledge, Harvey Gerald, Min.E.,	McCune.
Ellis, Gwynne Wallace, C.E.,	Pratt.
Feagles, Ralph Levi, E.E.,	Buffalo.
Forter, Cecil Alfred, C.E.,	Marysville.
Forter, Samuel, C.E.,	Marysville.
Freiburghouse, Edward, E.E.,	Hiawatha.
Gelwix, Edmund, C.E.,	Thayer.
Gowans, Harry Wilson, M.E.,	Lawrence.
Hambleton, Thomas, E.E.,	Herington.
Harvey, Leslie J., E.E.,	Salina.
Henderson, William Simpson, C.E.,	Leavenworth.
Heter, Wylie, E.E.,	Sterling.
Hillabrant, John W., C.E.,	Washington.
Horton, Clyde, E.E.,	Sterling.
Johnson, Fred Rudolph, E.E.,	Salina.
Kent, Robert, Chem.E.,	Lawrence.
Lank, William John, M.E.,	La Crosse.
Lee, Benedict, C.E.,	Hutchinson.
Miller, Vanroy W., E.E.,	Lawrence.
McShane, Jesse J., C.E.,	Gardner.
Noel, Elmer, C.E.,	Pittsburg.
Orr, Robert E., E.E.,	Winfield.
Palmer, Sidney L., E.E.,	Burdett.
Pierschell, William, C.E.,	Holliday.
Pratt, Wallace, Min.E.,	Phillipsburg.

SENIORS—concluded.

Pulliam, Leonard, E.E.,	Lyons.
Rankin, Herbert William, Min.E.,	<i>Albuquerque, N. Mex.</i>
Ridnour, Roy Everett, E.E.,	Emporia.
Rieman, Jonathan Burwell, C.E.,	Meade.
Rose, Harry J., E.E.,	Atchison.
Russell, Frank A., C.E.,	Peabody.
Russell, Lloyd, C.E.,	Lawrence.
Sigler, Elmer, C.E.,	Kansas City.
Skofstad, Oscar James, C.E.,	Lawrence.
Smith, Harris B., Min.E.,	Lawrence.
Smith, Owen, E.E.,	Independence.
Stainer, Monroe Andrew, Min.E.,	Hays.
Stewart, Ross R., E.E.,	<i>Kansas City, Mo.</i>
Strode, Robert L., E.E.,	Fort Scott.
Stuart, Walter Fuller, E.E.,	Baldwin.
Vaughn, Wilton Arthur, C.E.,	Marion.
von Stein, Louis Raymond, E.E.,	Lawrence.
Wellington, Earl J., Chem.E.,	Salina.
White, Edward A., M.E.,	Independence.
Williams, Kersey G., C.E.,	Kansas City.
Wolcott, Walter, E.E.,	Lawrence.
Young, Benjamin Percy, E.E.,	Kansas City.

SENIORS, 68.

JUNIORS.

Adams, D. Stanley, C.E.,	<i>Kansas City, Mo.</i>
Ainsworth, Samuel, Min.E.,	Lyons.
Arthur, Frank Caddan, E.E.,	Galena.
Ball, Carl Milton, Min.E.,	Iola.
Balocca, Fred, E.E.,	Osage City.
Bergen, Ralph Howell, Chem.E.,	Wichita.
Bigelow, Roy, Min.E.,	Lawrence.
Bowser, Cleveland, E.E.,	Columbus.
Boyle, Carl Sherwin, Min.E.,	Emporia.
Burt, Clarence Leslie, C.E.,	Greensburg.
Card, Benjamin Andrew, E.E.,	Scott.
Coleman, Harry Shipp, M.E.,	Garnett.
Dassler, J. Carl, E.E.,	Leavenworth.
Edgerton, Oliver Paul, C.E.,	Randolph.
Edmonds, Walter Ernest, E.E.,	Lawrence.
Edmonds, Warren Oliver, C.E.,	Lawrence.
Emmett, William Edwin, C.E.,	Lawrence.
English, Arthur, E.E.,	Hiawatha.
Evans, John Corbly, M.E.,	Lawrence.
Frichot, Bert Charles, Chem.E.,	Leavenworth.
Gates, Cecil Horatio, jr., C.E.,	Rosedale.
Glaze, Frank Wyant, C.E.,	Lyons.
Groesbeck, Arthur Jerome, E.E.,	Blue Rapids.
Hennessy, Benedict, C.E.,	Fulton.
Houghton, Albin Jonas, E.E.,	Cottonwood Falls.
Johtntz, Albert Frederick, C.E.,	Abilene.

JUNIORS—concluded.

Johnitz, Harry Herbert, C.E.,	Abilene.
Jones, Ray, E.E.,	Leavenworth.
Kackley, Walter John, C.E.,	Parsons.
Lednicky, Victor Englebert, E.E.,	Everest.
Linton, William M., C.E.,	Lawrence.
Liston, Roy, E.E.,	Altamont.
Lusk, Charles Winslow, C.E.,	Galena.
Luther, Herbert Lawrence, C.E.,	Lawrence.
Lynch, Frank Curtis, E.E.,	Cherryvale.
Merwin, John Milton, M.E.,	Lawrence.
Miller, Henry H., C.E.,	Fort Scott.
Morris, Glen S., E.E.,	Eureka.
Morrow, Cyrus, C.E.,	Waterville.
McCoy, Curtis J., C.E.,	Hiawatha.
McCulley, Harry Hemphill, C.E.,	Broughton.
McCune, George Addison, C.E.,	Leavenworth.
Nevinger, Daniel, E.E.,	Columbus.
Nixon, Henry L., E.E.,	<i>Kansas City, Mo.</i>
Parmelee, Paul Ross, Chem.E.,	Topeka.
Patchelleff, Boris J., Min.E.,	<i>Sophia, Bulgaria, Europe.</i>
Pleasant, Carl, C.E.,	Lyndon.
Pratt, Fred Cameron, M.E.,	<i>Webb City, Mo.</i>
Priest, Richard Newton, C.E.,	Chanute.
Rea, Fred I., E.E.,	Hiawatha.
Rouse, Carl Everett, C.E.,	Beloit.
Sippy, Walter, Chem.E.,	Belle Plaine.
Skofstad, Martin Ernest, C.E.,	Lawrence.
Stanley, Lloyd Lawrence, Min. E.,	Lawrence.
Stegeman, Amel, C.E.,	Hope.
Thiele, Ernest J., E.E.,	Washington.
Thiele, William Fred, E.E.,	Hanover.
Tripp, Ray Gifford, C.E.,	Herington.
Trowbridge, Carl Boyd, Min.E.,	Argentine.
Veatch, N. Thomas, C.E.,	Atchison.
Weith, Archie James, Chem.E.,	Iola.
Welsh, Charles Robert, E.E.,	Clifton.
Winter, Fred Hill, E.E.,	Lecompton.
Woodbury, Richard Lincoln, Min.E.,	Lawrence.

JUNIORS, 64.

SOPHOMORES.

Ahlers, Johannes, C.E.,	<i>New York, N. Y.</i>
Armstrong, Frank Logan, E.E.,	Lawrence.
Aspinall, Robert Frederic, Min.E.,	Iola.
Atkinson, Paul Sherwood, E.E.,	Lawrence.
Ayer, Raymond Cecil, E.E.,	Dodge City.
Ballard, Herbert Clytus, C.E.,	Nickerson.
Baellinger, Carl, C.E.,	Burlington.
Barkley, John Fred, Min.E.,	Chanute.
Barry, Raymond Adelbert, E.E.,	Lawrence.
Beal, Arthur Floyd, E.E.,	Lawrence.

SOPHOMORES—*continued.*

Beck, Edward Paul, C.E.,	Pratt.
Black, Earl Tennyson, C.E.,	Baldwin.
Boerner, Oscar Crist, C.E.,	Colby.
Bohnstengel, Walter, M.E.,	Dodge City.
Bower, Noble, C.E.,	Winfield.
Brown, Jesse Fred, C.E.,	Westmoreland.
Budd, Alfred N., Chem.E.,	<i>Kansas City, Mo.</i>
Burkholder, William Arthur, C.E.,	McPherson.
Burnham, Walter Clinton, C.E.,	Wa Keeney.
Burtch, Thomas Wendell, C.E.,	Hutchinson.
Burton, Ansel M., C.E.,	Neodesha.
Bush, Lee Marshall, C.E.,	Burlingame.
Cain, John Milton, C.E.,	Atchison.
Caldwell, William, E.E.,	Geneseo.
Campbell, Carl Howard, C.E.,	Lyndon.
Cassell, Harry Lee, E.E.,	Fort Scott.
Chapple, Ira, E.E.,	Troy.
Clawson, Bunnie F., C.E.,	Wamego.
Coors, William Frederick, E.E.,	Howard.
Cowan, Herbert Melvin, E.E.,	Abilene.
Coyle, John William, E.E.,	<i>Guthrie, Okla.</i>
Cross, Glen, E.E.,	Wichita.
Cummins, Andrew Adair, C.E.,	Wichita.
Dahlene, Oscar, M.E.,	Lawrence.
Devlin, Francis Edwin, C.E.,	Newton.
Dougherty, James Wilfred, Min.E.,	Cawker City.
Duckworth, Albert, E.E.,	Garden City.
Fairchild, Fred Postlewait, M.E.,	Topeka.
Farber, Elbert, E.E.,	Hoxie.
Foster, Harold William, E.E.,	Lawrence.
Foster, Vernon Simons, E.E.,	Parsons.
Fuhrman, Theodore Albert, M.E.,	Wathena.
Garver, John Diller, M.E.,	Topeka.
Gilmore, Walter Ellsworth, C.E.,	El Dorado.
Hackman, Robert George, Chem.E.,	Lawrence.
Hammond, Robert Hugh, C.E.,	Independence.
Harvey, Arthur, C.E.,	Salina.
Haskins, Charles Arthur, C.E.,	Kingman.
Hesser, Fred Reeder, C.E.,	Beloit.
Hoadley, Herbert Eugene, E.E.,	Fort Scott.
Hoffman, Charles, Chem.E.,	Elmo.
Hollingsworth, Horace Wright, C.E.,	Leavenworth.
Houghton, Howard William, C.E.,	Beloit.
Howe, Samuel Washburn, E.E.,	Belleville.
James, Llewellyn Edward, C.E.,	<i>Kansas City, Mo.</i>
Jennings, Claude Stuart, C.E.,	<i>Kansas City, Mo.</i>
Jones, Jacob Oscar,	Barrett.
Jonte, John Herbert, Min.E.,	Parsons.
Junkin, John Evans, jr., C.E.,	Sterling.
Kenny, William Dennis, E.E.,	Scammon.
King, Thomas Phillips, C.E.,	Minneapolis.

SOPHOMORES—*continued.*

Kingsbury, William Frank, M.E.,	Lawrence.
Lander, Albert, C.E.,	Lawrence.
Laughlin, James Lyman, C.E.,	<i>Kansas City, Mo</i>
Learned, Albert Preisach, C.E.,	Lawrence.
Leland, Cyrus Austin, E.E.,	El Dorado.
Leslie, Mattison Douglas, E.E.,	<i>Ballinger, Tex.</i>
Loreditsch, Clarence Joseph, E.E.,	Hays.
Love, Frank Austin, jr., Min.E.,	Arkansas City.
March, Robert Collamer, C.E.,	Topeka.
Meath, Francis Joseph, E.E.,	Humboldt.
Moon, Clare Ellery, C.E.,	Cottonwood Falls.
Morgan, John Francis, C.E.,	Sylvan Grove.
Naylor, Charles, C.E.,	Yates Center.
Neal, George Alfred, jr., C.E.,	<i>Kansas City, Mo.</i>
Newcomb, Rexford, C.E.,	Burlington.
Nothstein, Raymond Arnold,	Burlington.
Nystrom, Clifford William, E.E.,	Topeka.
Ollis, William Herbert, C.E.,	<i>Kansas City, Mo.</i>
Osborn, Fred P., C.E.,	Howard.
Penniman, James Brown, C.E.,	Fort Scott.
Perkins, Clement Dudley, M.E.,	Lawrence.
Perry, William Coulling, jr., Min.E.,	<i>Kansas City, Mo.</i>
Peterson, Christian A., E.E.,	Greenleaf.
Pierce, Frederick Charles, C.E.,	Marysville.
Poe, Charles Roy, E.E.,	Lawrence.
Pohlman, Carl Lautz, E.E.,	Ellsworth.
Ponsler, Roscoe, E.E.,	Iola.
Purton, Thomas Anthony, E.E.,	Minneapolis.
Quiring, Walter Otto, C.E.,	Newton.
Radcliffe, Howard, C.E.,	Frankfort.
Rauch, Le Roy, C.E.,	Topeka.
Reece, Clyde, C.E.,	Topeka.
Reuter, William Gotlieb, M.E.,	Topeka.
Riste, Roy Baringer, C.E.,	Norton.
Roberts, Elmore E., Min.E.,	Howard.
Rockefeller, Victor Earl, E.E.,	Holton.
Rowlands, Robert John, E.E.,	Lawrence.
Ruth, Herman Albert, C.E.,	Moundridge.
Scamell, Ralph Eugene, C.E.,	Atchison.
Scott, Lester J., Min.E.,	Mulberry.
Senseman, William Burgess, C.E.,	Harper.
Servey, Dan Fulton, M.E.,	Iola.
Shaffer, Joseph Frank, C.E.,	Chetopa.
Sherman, Carl, C.E.,	Salina.
Shinn, Clay Bride, Chem.E.,	Ottawa.
Shotts, Timothy Ward, E.E.,	La Crosse.
Simpson, Roy Livingston, E.E.,	Clay Center.
Smith, Frank Edwin, C.E.,	Sterling.
Spear, Roy Elbert, C.E.,	Wellington.
Steele, Clarence Rufus, E.E.,	<i>Kingsfisher, Okla.</i>
Stephenson, Thomas Jefferson, Chem.E.,	Holton.

SOPHOMORES—*concluded.*

Stevenson, Arnie R., Min.E.,	Belleville.
Stevenson, Harry Burdette, Chem.E.,	Parkville, Mo.
Stocks, Brainerd Roe, E.E.,	Garden City.
Swiggett, A. Clayton,	Wichita.
Taylor, Harry James, C.E.,	Larned.
Teeter, Carroll Ethelbert, Min.E.,	Lawrence.
Templeton, Clifford Arthur, C.E.,	Esbon.
Thomas, Ralph Burgess, E.E.,	Galena.
Tyler, Jo, E.E.,	Lawrence.
Waddell, Charles C., E.E.,	Wichita.
Wagenknecht, Harry, E.E.,	Wathena.
Walker, Lester Carl, C.E.,	Mankato.
Wall, George D.,	Lawrence.
Waring, Clarence, E.E.,	Abilene.
Weith, George Stephen, Chem.E.,	La Harpe.
Wick, Ray, C.E.,	Detroit.
Wiedemann, Otto Jackson, E.E.,	El Dorado.
Wright, Claude Waldo, Chem.E.,	Iola.

SOPHOMORES, 130.

FRESHMEN.

Adams, Francis Elliott,	Fort Scott.
Ahrens, Henry Denton,	Paola.
Armstrong, Harold Elwood,	Greenleaf.
Bacon, John,	Emporia.
Banks, Robert Tunstall,	Kansas City, Mo.
Barnard, Fred Swain,	Osawatomie.
Barrett, Fred Spencer,	Westmoreland.
Bartlett, Ray L.,	Kansas City, Mo.
Bays, Samuel,	Conway Springs.
Bellows, Warren S.,	Kansas City, Mo.
Blades, James,	Minneapolis.
Blain, Glenn,	Hiawatha.
Boesche, Pearl J.,	Gaylord.
Braden, John Carroll,	Washington.
Breidenthal, Maurice L.,	Kansas City.
Briggs, Fred C.,	Pratt.
Brigham, Newton J.,	Iola.
Broeker, Fritz Graf,	Lawrence.
Browne, Lawrence Leland,	Kansas City.
Brune, Wesley,	Lawrence.
Burger, Harley J.,	Reserve.
Cadmus, Daniel Harrison,	Parsons.
Cain, Merle,	Topeka.
Campbell, Harry E.,	Harper.
Castholm, Peter,	Harper.
Chapman, Charles Herbert,	Topeka.
Clark, James Erle,	Osborne.
Cleland, Ross G.,	Lawrence.
Cole, Ralph G.,	Girard.
Conley, Murray C.,	Oklahoma City, Okla.

FRESHMEN—continued.

Coppage, Martin Homer,	Garnett.
Cowell, William Harold,	Clyde.
Crowley, Marwood Harrison,	Lawrence.
Crum, Errett Ross,	Munden.
Cubbison, Charles E.,	Gardner.
Davenport, John Adrian, jr.,	Salina.
Davidson, Paul Glenn,	Lecompton.
Dawdy, Arthur,	Chanute.
Dillon, Harry,	Eureka.
Dingelstedt, Otto Ernest,	Lawrence.
Dolman, Samuel Grove,	Topeka.
Dunn, George Chester,	Hanover.
Dunmire, Harry Clinton,	Lawrence.
Eaton, Albert Budd,	Clay Center.
Edmiston, Homer Jackson,	Garden City.
Ellis, Herbert A.,	Pratt.
Elledge, George A.,	McCune.
Evans, Walter M.,	Neodesha.
Ewers, Edmond,	Sedan.
Falloon, Frank G.,	Hlawatha.
Farney, Edgar David,	Kansas City, Mo.
Farrell, John Dillon,	Wamego.
Ferguson, Walter I.,	Kansas City.
Fisher, Charles Robert,	Pittsburg.
Fisher, Robert Richard,	Lawrence.
Fishman, William,	Kansas City, Mo.
Gause, Charles I.,	Mound City.
Gossard, Charles O.,	Kansas City, Mo.
Graham, Mathew A.,	Leavenworth.
Greene, Gordon Earle,	Solomon.
Griffin, Walter T.,	Lawrence.
Grignard, Emile E.,	New York, N. Y.
Haasis, Herman L.,	Florence.
Hacker, Melvin, jr.,	Leavenworth.
Hall, Ross Everson,	Hutchinson.
Haller, Charles Arthur,	Alma.
Hamilton, John K.,	Kansas City, Mo.
Hammond, Gerald Douglas,	Winfield.
Hansen, Herbert C.,	Wellington.
Hanson, Carl Falster,	Geuda Springs.
Harris, Harvey Burns,	Pleasanton.
Hartmann, Miner Louis,	Hutchinson.
Heckert, Matthew Lloyd,	Independence.
Hemphill, James Albert,	Lawrence.
Hilford, Volney Hewitt,	Caney.
Hilliard, Frank Charles,	Pratt.
Hoffman, Henry A.,	Ellsworth.
Holmes, Merle Verne,	Kansas City.
Holmes, Willard Colt,	Kansas City, Mo.
Holthoefer, Joseph Leo,	Lawrence.
Howard, J. Deaton,	Eureka.

FRESHMEN—*continued.*

Hughes, Guy G.,	Rosedale.
Jackson, Clyde Winters,	Kirwin.
Johnston, Fred Emmett,	Madison.
Jones, Guy Morgan,	Wa Keeney.
Joste, Frank L.,	Leavenworth.
Kaffer, Lisle Joseph,	Atchison.
Kaiser, Liepman,	Fort Scott.
Kaufman, Richard Glenn,	Hutchinson.
Kemp, Delbert Clinton,	Lawrence.
Ketchum, Harold J.,	Lawrence.
Klingberg, Wilbert Octavus,	Osage City.
Knecht, Herman D.,	Pittsburg.
Koogle, Henry Goodrich,	Newton.
Kreider, Charles Cottier,	Lawrence.
Kuns, Frank,	McPherson.
LaShell, Eugene Maynard,	Ellis.
Lauman, William T.,	Syracuse.
Leclerc, Walter,	Hutchinson.
Lieber, Edward Joseph,	Osage City.
Long, Verne Vere,	Madison.
Loomis, Alexander Campbell,	Topeka.
Louderback, Harley Cosby,	Denton.
Lupton, Edwin Henry,	Hoxie.
Lusk, Robert Alexander,	Galena.
Lynch, Francis John,	Herington.
Mabie, Claude Melvin,	El Dorado.
Maffet, Samuel Ross,	Lawrence.
Magatagan, George C.,	Chanute.
Magee, Harry Lyle,	Blue Mound.
March, Harvey Foster,	Kansas City.
Marlin, Ralph,	Eureka.
Martin, Leroy,	Dodge City.
Matkins, Noah B.,	Lawrence.
Means, Boyd Irwin,	Arkansas City.
Mead, Forrest Dearborn,	Beloit.
Meade, Holmes,	Topeka.
Mellard, George,	Russell.
Merwin, Bruce W.,	Lawrence.
Meyer, Walter,	Garnett.
Miller, Raymond,	Salina.
Mitchell, George T.,	Girard.
Moffett, Joseph Orr, jr.,	Peabody.
Monroe, Morton Glen,	Fairview.
Morton, James Paul,	Osborne.
McCleery, John C.,	St. Marys.
McLain, Samuel Arthur,	Newton.
McWhorter, C. Leonard,	Kansas City, Mo.
Nash, Dan Maynard,	Lyons.
Nelson, Frank H.,	Eureka.
Newland, Joseph,	Hoxie.
Norris, Robert Arthur,	Burdette.

FRESHMEN—*continued.*

Norris, William Sidney,	<i>Kansas City, Mo.</i>
Noyes, Robert Franklin,	Troy.
Osmond, Lawrence,	Great Bend.
Parker, John Bowman,	<i>Kansas City, Mo.</i>
Parrish, George Gaylord,	Rosedale.
Penniman, E. Douglas,	Fort Scott.
Porter, John Harold,	Clay Center.
Porterfield, Roy,	Holton.
Price, William F., jr.,	Topeka.
Pyle, Glenn L.,	Wilmore.
Redinger, Hubbard David,	Vinland.
Richards, Chester Raymond,	Wellington.
Riney, Arthur Herbert,	Dodge City.
Robinson, Sylvester,	Topeka.
Roby, Frank L.,	Stafford.
Rodebush, Worth Huff,	Selden.
Roos, Robert,	<i>Kansas City, Mo.</i>
Ross, Milton William,	Parsons.
Row, Lathe B.,	Larned.
Ruggles, Glenn A.,	Marysville.
Rush, Earl Samuel,	Axtell.
Russell, George W.,	Lawrence.
Ryan, Edwin,	Hope.
Ryan, Joseph Lacy,	Hays.
Schreiner, Walter R.,	Frankfort.
Schwartz, Theodore,	<i>Kansas City, Mo.</i>
Severns, William H.,	Garnett.
Shaw, Harold,	Hiawatha.
Shearman, Curtice,	Wichita.
Sieder, H. Herman,	Enterprise.
Sipple, Caleb Boyer,	Sedan.
Smith, Guy Chester,	Lawrence.
Smith, Herbert T.,	Pratt.
Smith, Millard,	Pratt.
Smithmeyer, Fred Poehler,	Lawrence.
Sparrow, R. Hayes,	Leavenworth.
Steinberg, Moses,	<i>Bessarabia.</i>
Stewart, J. A., jr.,	Wathena.
Stockwell, Herbert,	Paola.
Sutton, Everett Blair,	<i>Kansas City.</i>
Taylor, Ralph Eldred,	Larned.
Thomas, Robert William,	Topeka.
Tibbets, Ernest R.,	Parsons.
Tiffany, Truman L.,	Lyndon.
Trigg, Otto B.,	<i>Kansas City, Mo.</i>
Troup, Kenneth F.,	<i>Kansas City.</i>
Tyler, Donald Marsh,	Junction City.
Uhrlaub, Julius George,	Lawrence.
Van den Broek, John Abraham,	Lawrence.
Vawter, Elbert Will,	Osawatomie.
Vogel, George Willcott,	Leavenworth.

FRESHMEN—*concluded*.

Wagner, Leslie,	Columbus.
Wakeman, Roy Harrington,	Wathena.
Walden, Forest Clinton,	Newton.
Walker, Herman S.,	Hutchinson.
Watson, John Rudolph,	Lawrence.
Weekly, Guss Everett,	Iola.
Weeks, Fred L.,	Olathe.
Weimer, Jay,	Overbrook.
Wenger, Benjamin Edward,	Russell.
Whitcomb, Clarence,	Council Grove.
Willis, Stanley,	Horton.
Wingett, Roy Arnett,	Burlington.
Wolf, James Milo,	Garden City.
Wray, Floyd Herman,	Oskaloosa.
Wright, Earl Leon,	Pleasanton.
Young, Axel William,	Lawrence.

FRESHMEN, 199.

SPECIALS.

Armsby, Lauren, Chem.E.,	Council Grove.
Keller, John Elmer, C.E.,	Independence.
Loper, Cleveland Scott, C.E.,	Norcatour.
Matthews, Dan A., C.E.,	Arkansas City.
Mavity, John W., C.E.,	Lyndon.
Pringle, Merle Blaine, C.E.,	Lawrence.
Rubio, Oswaldo, M.E.,	<i>Camaguey, Cuba.</i>
Smith, Edgar Z., C.E.,	Pittsburg.
Stephens, Edward Everett, E.E.,	Bethel.
Vaniman, Otis S., Chem.E.,	McPherson.
White, Leonard, C.E.,	Delphos.
Wood, Clayton Vaughn, C.E.,	Burlingame.
Young, Everett Gillham, C.E.,	Topeka.

SPECIALS, 13.

UNCLASSSED.

Cook, Wendell Phillips,	Lawrence.
Judy, Wilbur H.,	Ottawa.
Rightly, Thomas James,	Salina.
Thomen, Martin K.,	Junction City.
Weibel, Ernest,	Lawrence.

UNCLASSSED, 5.

SCHOOL OF FINE ARTS.

GRADUATES.

Nungesser, Ella, Lawrence.

GRADUATES, 1.

SENIORS.

Arbuthnot, Lulu, Belleville.
 Bowden, Bessie, Lawrence.
 Clevenger, Elda Babbett, Lawrence.
 Cross, Viah Mae, Hutchinson.
 Fitch, Louise, Lawrence.
 Garvin, Daisy D., Lawrence.
 Houlton, Frances, Garden City.
 Ise, John, Downs.

SENIORS, 8.

JUNIORS.

Anderson, Charlotte L., Chetopa.
 Babb, Alvin Leroy, Lawrence.
 Clark, Maude Lucille, Fredonia.
 Cone, Margaret, Lawrence.
 Cornelius, Lillian W., Nickerson.
 Dinsmoor, Frances, Lawrence.
 Eggleston, Bessie LeBaron, Pratt.
 Ellis, Pearl, El Dorado.
 Fowler, Harry, Independence.
 Garrett, Mayme Adelaide, Lawrence.
 Hester, Nina May, Lawrence.
 Kilworth, Bertha Belle, Lawrence.
 Krone, Lucile E., Independence.
 McGinnis, Hazel, El Dorado.
 McKnight, Dorothea Janet, Junction City.
 Reynolds, Kate, Clay Center.
 Russ, Gertrude Elizabeth, Lawrence.
 Shaler, Ethel Sarah, Lawrence.
 Thorpe, Mrs. George E., Scandia.
 Warner, Grace, Garden City.
 Weidlein, Verna M., Augusta.

JUNIORS, 21.

SOPHOMORES.

Barkdull, Blanche Anne, Lawrence.
 Caldwell, Kate, Lawrence.
 Carpenter, Gertrude Irene, Girard.
 Cooper, Gertrude Helen, Lawrence.
 Davies, Sophia, Lebo.
 Edgerton, Lyla Della, Randolph.
 Emley, Pearl Agnes, Great Bend.
 Gilmore, Mary E., El Dorado.

SOPHOMORES —concluded.

Gleed, Mary Elizabeth,	Topeka.
Hart, Katy,	Fort Scott.
Hughes, Rheua,	Kansas City.
Marshall, Lydia,	Lincoln.
Moses, Lillian Alice,	Great Bend.
Murphy, Gertrude,	Lawrence.
Oshant, Henrietta Rose,	Hays.
Purdy, Jennie Corita,	Chanute.
Ridenour, Lenna,	Emporia.
Sterns, Minnehaha,	Hiawatha.
Uhrlaub, Agnes,	Lawrence.
Wilhelmi, Alice,	Lawrence.
Williams, Effie,	Lawrence.
Wolfe, Amy Emma,	Frankfort.

SOPHOMORES, 22.

FRESHMEN.

Anderson, Ruie La Merle,	Chanute.
Archer, Lillian,	Garnett.
Beal, Zoe,	Chanute.
Bennett, Gordon Stanley,	Sedan.
Bergen, Ruth H.,	Wichita.
Bethers, Elizabeth,	Lyons.
Cambern, Alice,	Erie.
Collins, Gretta,	Belleville.
Cone, Irma Glayds,	Chanute.
Crum, Mattie Evelyn,	Narka.
Dalton, William B.,	Lawrence.
DeLay, Florence G.,	Parsons.
Dreibelbis, Lillian A.,	Sabetha.
Edie, Fern Elizabeth,	Lawrence.
Ellis, Ellen,	Cherryvale.
Fisher, Sadie Isabel,	Lawrence.
Gano, Maud Virginia,	Great Bend.
Groesbeck, Hildegard,	Blue Rapids.
Hageman, Claire,	Salina.
Hase, Clara Augusta,	Lawrence.
Helvering, Alma Mae,	Beattie.
Hobart, Florence M.,	Iola.
Janes, Helen Marguerite,	Williamsburg.
Lapham, Edith Mahala,	Wetmore.
Lisenbee, Audrey Beverly,	Cherokee.
Moore, Mabel F.,	Burlington.
Moser, Ruby,	Oberlin.
Mott, Ethel B.,	Harper.
Murphy, Alice,	Lawrence.
Robbins, Leroy,	Lawrence.
Rowlands, Gertrude Mabel,	Lawrence.
Sanders, Elva B.,	Burlington.
Saunders, H. Pauline,	Lawrence.
Schleifer, Zana,	Lawrence.

FRESHMEN—concluded.

Scott, Donna Kathryn,	Cherokee.
Sheldon, Margaret May,	<i>Kansas City, Mo.</i>
Simpson, Walter,	Clay Center.
Stephenson, Hazel Belle,	Burlington.
Stevens, Vera,	Lawrence.
Varner, Gertrude Nelle,	Colony.
Walbridge, Eva,	<i>Kansas City, Mo.</i>
Yeater, Mary Elizabeth,	Lawrence.
Young, Maynard	Girard.

FRESHMEN, 43.

SPECIALS.

Alford, Sylvia,	Lawrence.
Andrews, Vernon N.,	Powhattan.
Asher, Henry H.,	Lawrence.
Bailey, Lois Maurine,	Lawrence.
Barkdull, Charles,	Lawrence.
Barry, Bernese L.,	Lawrence.
Beavers, Effie,	Home.
Benner, Amy Mildred,	Peru.
Blaylock, Julia,	Smith Center.
Boynton, Charles O.,	Kansas City.
Brigham, Bessie,	Hlawatha.
Burchett, Bolina,	<i>Kansas City, Mo.</i>
Butler, Eva,	Lawrence.
Campbell, Blanche,	<i>Kansas City, Mo.</i>
Campbell, Mary Margaret,	<i>Kansas City, Mo.</i>
Carson, Paul C.,	Ashland.
Carstensen, Louise Gretchen,	Belleville.
Clark, Mary Frances,	<i>St. Joseph, Mo.</i>
Clark, Erminie Ethel,	Lawrence.
Cone, Edna,	Lawrence.
Cosby, Mayme Aurelia,	Farmington.
Dalton, Mrs. B. J.,	Lawrence.
Davis, May Peak,	Parsons.
Fincke, Amanda,	Rosedale.
Finerty, Helen,	<i>Oklahoma City, Okla.</i>
Fitzgerald, Elizabeth,	Medicine Lodge.
Fullenwider, Clara Agnes,	El Dorado.
Gill, Mabel Ruth,	Clyde.
Greenlees, Agnes,	Lawrence.
Gregory, Marguerite Electa,	Lawrence.
Grimes, Thayer,	<i>Guthrie, Okla.</i>
Hambleton, Edith,	Herington.
Harper, Jessie,	Leona.
Hazelrigg, Mildred,	Topeka.
Healey, Florence,	Lawrence.
Hearn, Nadine,	<i>Kansas City, Mo.</i>
Henley, Mrs. J. A.,	Lawrence.
Henry, Gladys Margaret,	Lawrence.
Herman, Hilma,	Scandia.

SPECIALS—concluded.

Hiatt, Ila Patti,	Lawrence.
Hill, Leonard James,	Hiawatha.
Hollingsworth, Pearl Evangeline,	Independence.
Howard, Ethel May,	Washington.
Hutchison, Eva,	Ottawa.
Ingels, Pauline,	Hiawatha.
Jay, Aileen,	Lawrence.
Keith, M. Helen,	Lawrence.
Kennedy, Madge Mignon,	Fredonia.
Kinne, Genevieve,	Lawrence.
Lane, Madge,	Lawrence.
Leslie, Hazel,	Lawrence.
Lewis, Vinnie,	Yates Center.
Matkins, Lola Cecil,	Lawrence.
Mitchell, Hannah,	Lawrence.
Mitchell, Hattie Florence,	Neodesha.
Morrow, Ethel,	Lawrence.
McCanles, Wilma,	Lincoln.
McElhinny, J. G.,	Lawrence.
McFarland, Ruth,	Lawrence.
McGinnis, Faith,	El Dorado.
McNitt, Ethel Pauline,	Washington.
Osborn, Grace,	Kansas City, Mo.
Overholt, Mary,	Topeka.
Palmer, Mary M.,	Lawrence.
Parker, Clement Arthur,	Kansas City, Mo.
Passon, Rebecca,	Lawrence.
Pendleton, Claudia Clara,	Lawrence.
Power, John,	Lawrence.
Raymond, Geneva,	Hiawatha.
Raynesford, Vesta,	Ellis.
Reynolds, Cora,	Lawrence.
Reynolds, Grace Josephine,	Lawrence.
Ridenour, Ella Bow,	Emporia.
Robinson, Wilma,	Lawrence.
Sellards, Minnie Mae,	Lawrence.
Sheldon, Frances,	Kansas City, Mo.
Smith, Joy F.,	Lawrence.
Spray, Ruth Gladys,	Lawrence.
Stephenson, Nellie,	Westphalia.
Sterling, Mrs. Charles,	Lawrence.
Taylor, Junia,	Douglass.
Troutman, Anna,	Topeka.
Whitman, Meriel,	Lawrence.
Williams, Bertha Juanita,	Lawrence.
Williams, Ralph Waldo,	Edgerton.
Woolsey, Ida,	Lawrence.
Young, Mildred,	Lawrence.
Youngberg, Louise,	Ottawa.

SCHOOL OF LAW.

SENIORS.

Adams, Clyde,	Topeka.
Blackmar, Charles Maxwell,	Kansas City, Mo.
Brunner, Emile M.,	Onaga.
Campbell, Newton,	Lawrence.
Childress, John Martin,	Lawrence.
Cohn, Julius,	Fort Scott.
Cook, Calvin George,	Lorraine.
Coughlin, Edward Henry,	Edgerton.
Coughlin, Robert Emmet,	Edgerton.
Coulter, Edwin,	Pittsburg.
Countryman, Thomas Franklin,	Wa Keeney.
Cox, Roy Arminius,	Augusta.
Crawford, James Elmo,	Eskridge.
Dennis, Clarence Glenn,	Seneca.
Drake, Frank, jr.,	Lawrence.
Earhart, Birdsey A.,	Oxford.
Eaton, Hyden Jay,	Kansas City.
Eddy, William Edward,	Abilene.
Fleming, John Austin,	Buffalo.
Gaskill, Harry Andrew,	Ottawa.
Gibbens, Leo Thomas,	Kingman.
Grant, Eugene Winfield,	Emporia.
Hart, Harry W.,	Newton.
Ise, Charles Daniel,	Downs.
Jennings, James Thomas,	Nickerson.
Jones, John Paul,	Kansas City.
Kiger, Marlon A.,	Parsons.
Lamb, Arnott Ray,	Yates Center.
Landon, Alfred M.,	Independence.
Lucas, Asa Walter,	Admire.
Manley, Lester Bryant,	Junction City.
Mann, Albert Alexander,	Lawrence.
Martin, Fred Oscar,	Altamont.
Moore, Louis Howell,	Fort Scott.
Myers, Stanley I.,	Fort Scott.
McCanles, Wendell Windom,	Lincoln.
Parsons, John Robert,	Collyer.
Pierson, Jesse Verne,	Frankfort.
Randall, Harry,	Salina.
Rice, Raymond Fridman,	Lawrence.
Souders, Otto,	Cheney.
Stryker, Jacob Lowe,	Fredonia.
Sullivan, Albert M.,	Louisville.
Tinder, Ray Harold,	Parsons.
Vigg, Sandor James,	Alva, Okla.

SENIORS—concluded.

Wall, Paul Jean,	Wichita.
Walmer, Sadie,	Merriam.
Worrell, Bertram Talkington,	Holton.

SENIORS, 48.

MIDDLES.

Atwood, James H.,	Sibley.
Barnes, Edgar Rankin,	Blue Mound.
Bartholomew, Bruce,	Topeka.
Boyd, Lauron B.,	Larned.
Brady, Albert Neville,	<i>St. Joseph, Mo.</i>
Brown, Walter Eugene,	Holton.
Burke, William Jennings,	Rosedale.
Butler, Russell Earl, jr.,	Baldwin.
Cannon, Leroy Thomas,	Cunningham.
Carlson, John Edward,	Kansas City.
Carroll, Charles Louis,	Great Bend.
Chapman, Clifford Frank,	<i>Perry, Okla.</i>
Craig, Clarence,	<i>Joplin, Mo.</i>
Crowell, George F.,	Attica.
Doubleday, Floyd Egbert,	Lawrence.
Douglas, Richard Leroy,	Crestline.
Ferguson, Winfield Bertram,	Kansas City.
Fisher, Hugh Thomas,	Baldwin.
Gibbs, George Nelson,	Oskaloosa.
Goldman, Heim,	Kansas City.
Gowenlock, Thomas Russell,	Clay Center.
Groene, Merle Carlisle,	Kansas City.
Gurley, Alexander Henry,	Barnard.
Hackett, John Louis,	<i>Fort Dodge, Iowa.</i>
Harris, Montgomery,	Lawrence.
Jones, Ben L.,	Coffeyville.
Langley, Frank,	Olpe.
Marshall, Daniel Benjamin,	Lawrence.
Michaels, Roy,	Horton.
Mitchell, Charles William,	Cherryvale.
Pearson, Ridley Stillson,	Merriam.
Porter, George Alexander,	Holton.
Reed, Howard C.,	Kansas City.
Rice, William E.,	Topeka.
Scott, John Winfield,	Lawrence.
Simminger, Jacob H.,	Atwood.
Stearns, Irwin Henry,	Colwich.
Thomas, Clive Elmer,	<i>Geary, Okla.</i>
Thompson, Horton Franklin,	Horton.
Thorpe, George Everland,	Scandia.
Wood, Harley Cartright,	Ness City.
Worline, Robert Hite,	Peabody.

MIDDLES, 42.

JUNIORS.

Allendoerfer, Maurice,	Concordia.
Alter, Edwin,	Lyons.
Amick, John Sherman,	Wellington.
Apt, Frederick Gazlay,	Iola.
Armsby, Harold Marks,	Council Grove.
Badger, Gordon,	Eureka.
Bailey, Paul B.,	Troy.
Bales, Frank,	Colby.
Bennett, Bernard Howard,	Nashville.
Blacker, Morris A.,	Kansas City.
Bowers, Benjamin Franklin,	Centropolis.
Brain, Horace,	Pittsburg.
Brookens, Edwin Elden,	Smith Center.
Burns, Frank,	Sedan.
Clark, William Miller,	<i>St. Joseph, Mo.</i>
Clevenger, F. Keith,	Osawatomie.
Cline, Foster,	Roanoke.
Coble, Ward Henry,	<i>Kansas City, Mo.</i>
Commons, Clyde,	Devon.
Connally, John,	Fort Scott.
Cooper, Raymond G.,	Lyons.
Courtney, Guy Cecil,	Washington.
Douglas, Rey Oro,	Mound City.
Elder, Edward S.,	Dodge City.
Emerick, James L.,	Lawrence.
Forde, Edgar M., Jr.,	Emporia.
Gilmore, Charles M.,	Lawrence.
Griffith, Guy T.,	Lawrence.
Hamilton, J. M. Casey,	<i>Fort Madison, Iowa.</i>
Haney, Edward E.,	Fontana.
Heaton, E. R.,	Wichita.
Hess, Louis Benjamin,	Humboldt.
Hilliard, Frank Charles,	Pratt.
Hood, Harry Cannon,	Pittsburg.
Ingleman, Carl Arthur,	Lawrence.
Jackson, Lee,	Barnard.
Johnson, Steen M.,	Stratton.
Jones, Hal,	Iola.
Kenny, Frank,	Columbus.
Kohler, Charles Alfred,	Moran.
Larmor, Wilson Charles,	Garden City.
Lashbrook, S. Leonard,	Washington.
Lewellen, Alferd T.,	Chetopa.
Lock, Maurice,	Manning.
Lord, Carroll Judd,	Dodge City.
Mallom, Ellis,	Pittsburg.
Matkins, Benjamin Harrison,	Lawrence.
Matkins, Noah B.,	Lawrence.
Maurice, L. Robert,	Argentine.
Merillat, Chris O.,	Lafontaine.
Miller, Milton Bradford,	Osage City.

JUNIORS—*concluded.*

Miller, William Jesse,	Osage City.
Moodie, Hubert,	Lawrence.
McCanles, Joseph Colbert,	Lincoln.
McCleverty, Adelbert D.,	Lawrence.
Nance, Vale L.,	<i>Kansas City, Mo.</i>
Norris, George Roy,	Burdett.
Osborn, Monroe,	<i>Pauls Valley, Okla.</i>
Parker, Frank E.,	<i>Kansas City, Mo.</i>
Peterson, Claude L.,	Kansas City.
Ramsey, Chester A.,	Lawrence.
Reed, Leslie,	Rosedale.
Reid, Robert Johnson,	Howard.
Riddle, Arthur Fuller,	Minneapolis.
Riling, John,	Lawrence.
Rinker, Robert Lee,	Wa Keeney.
Roberts, Arthur V.,	Wichita.
Robertson, John,	Lawrence.
Rogers, Harry Leslie,	Pittsburg.
Rutherford, Lucien Baker,	Leavenworth.
Seddon, Arthur Hugh,	<i>Kansas City, Mo.</i>
Sheridan, Bernard L.,	Paola.
Shetlar, Ray Johnson,	Conway Springs.
Snattinger, Irwin,	Topeka.
Starbuck, Harvey,	Plainville.
Stavely, Albert,	Lyndon.
Swan, Clifford H.,	Pittsburg.
Taylor, Fred,	Lawrence.
Thoms, J. Orville,	Blue Mound.
Underwood, William Earl,	Yates Center.
Van Cleave, Thomas M.,	Kansas City.
Waage, Theodore,	Le Roy.
Wagoner, John Dowe,	<i>Fort Madison, Iowa.</i>
Wassom, Roscoe Conklin,	Kansas City.
Weaverling, Ralph Eugene,	<i>Beatrice, Neb.</i>
Wiley, Max R.,	Lawrence.
Williams, George Minor,	Kansas City.
Yankle, Russell H.,	Lawrence.

JUNIORS, 88.

SPECIALS.

Bartlett, Samuel E.,	Wellington.
Brown, Chauncey G.,	Wichita.
Chandler, William Wilford,	<i>Belton, Mo.</i>
Humason, Burgess Helmic,	Liberal.
Milton, Roy R.,	Lawrence.
Sheen, Edgar Forde,	Lawrence.
White, William Henry, jr.,	Council Grove.
Wolfrom, Anna,	Lawrence.

SPECIALS, 8.

SCHOOL OF PHARMACY.

SENIORS.

Allison, Earl M.,	Stockton.
Ballard, Volney Birney,	Nickerson.
Bissantz, Oscar Rudolph,	Wichita.
Bixby, Louis Edmund,	McPherson.
Brown, Edward Roy,	Duquoin.
Campbell, Wilmer Amurma,	Kansas City.
Cordell, Frank Albert,	Edgerton.
Duncan, George Howard,	Jetmore.
Green, Wendell,	Kansas City.
Jennings, Edward Burnis,	Kansas City.
Kasey, Hugh Fields,	McPherson.
Lottridge, Charles,	Pratt.
Martin, Tulley Bushnell,	Arkansas City.
McKinley, Albert,	Greensburg.
Names, Violet Marguerite,	Holsington.
Nite, Samuel Houston,	Eminence.
Noll, M. Robert,	Atchison.
Osborn, John Lynn,	Baldwin.
Ross, George Edgar,	Troy.
Searles, Joseph,	Wetmore.
Walker, Ray Edward,	Minneapolis.
Williams, Kate,	Lawrence.
York, James Robert,	Cunningham.

SENIORS, 23.

JUNIORS.

Adams, James Valentine,	Chase.
Arbuthnot, Clyde Park,	Cherryvale.
Arbuthnot, Frederick M.,	Belleville.
Berges, Louis,	Onaga.
Blades, James,	Minneapolis.
Bryant, Jesse W.,	Perry.
Butler, Joseph Aloysius,	Topeka.
Calderwood, Howard Newton,	Argentine.
Clarke, Charles W.,	Washington.
Coburn, Ralph Lafayette,	Preston.
Cole, George Randolph,	Meade.
Coolidge, Eldridge Porter,	Lawrence.
Craig, Arthur Whitmore,	Garnett.
Crow, Howard,	Pratt.
Davis, Clarence Jefferson,	Kansas City.
Dillard, Henry,	Kansas City.
Dimond, Merrill Roy,	Smith Center.
Doak, Edward,	Osborne.
Durham, David H.,	Spring Hill.

JUNIORS—*concluded.*

Elliott, James William,	Emporia.
Evans, Arthur,	Williamstown.
Fritsche, Edward Renz,	Leavenworth.
Fuger, Chan A.,	Hamlin.
Fuger, Edward,	Hamlin.
Gergen, Joseph Peter,	Eudora.
Gerken, John,	Ellis.
Harris, Charles G.,	Lawrence.
Hively, Glenn,	Bartlett.
Holmes, Philo Ernest, jr.,	Douglass.
Hoopes, Florence,	Clay Center.
Housel, Ervin J.,	Kincaid.
John, Henry,	Caldwell.
Judd, Malcolm Dana,	Meade.
Kates, George Kendall,	Newton.
Ketchersid, James H.,	Hope.
Kirkham, Harry M.,	Alva, Okla.
Kuntz, Walter John,	Bushton.
Loucks, Frank Wellington,	Lawrence.
Mitchell, John,	Holliday.
Myers, Elliott,	Tonganoxie.
McClay, Gerald Kenneth,	Plainville.
Patterson, Curtis John,	Oskaloosa.
Peterson, Lee A.,	Ottawa.
Poorman, Marion S.,	Arlington.
Rankin, Ray Presley,	Wakefield.
Reder, Hal Crawford,	Cheney.
Reed, Albert Edward,	Ottawa.
Rees, Ora B.,	Hutchinson.
Richardson, Bert T.,	Altoona.
Runyan, Leoni Cloyde,	La Harpe.
Salisbury, Will,	Lawrence.
Seaman, Frederick Herbert,	Hiawatha.
Shipley, Grant W.,	Neodesha.
Simmons, Arthur C.,	Ottawa.
Slater, Harry A.,	Severy.
Smith, James Alfred,	Cherryvale.
Steinberg, Moses,	Wichita.
Stevenson, Arthur Earl,	Baldwin.
Stratton, Frederick William,	Hartford.
Taylor, James Bennett,	Ottawa.
Tompkins, Monroe, jr.,	Lawrence.
Tripp, Newell,	Lawrence.
Van Scoyoc, James Guy,	Oakhill.
Warner, William Clyde,	Burlingame.
Webb, William Paul,	St. Joseph, Mo.
Wells, Leon Virgil,	Fort Scott.
Zeman, O. Richard,	Wilson.

SPECIALS.

Birch, Van L,	McPherson.
Campbell, Hugh Kenneth,	Cottonwood Falls.
Dunning, Agnes M.,	Chanute.
Wiedemann, Paul Anthony,	Alma.

SPECIALS, 4.

SCHOOL OF MEDICINE.

GRADUATES.

Brown, W. W., A.B.,	Kansas City.
Clark, Fay P., M.D.,	Kansas City.
Colvin, W. P., Ph.G.,	Kansas City.
Cornell, H. M., M.D.,	Kansas City.
Ellison, O. W., M.D.,	Sycamore.

GRADUATES, 5.

FOURTH YEAR.

Dingus, John Orum,	Mound City.
English, Carlos C.,	Cimarron.
Erickson, Emil T.,	Marquette.
Fortney, Alvan Maurice,	Fort Scott.
Garton, Avery Mortimer,	<i>Sedalia, Mo.</i>
Greene, Marie A., A.M.,	Topeka.
Harrington, George Leonard,	<i>Independence, Mo.</i>
Harvey, Clarence C.,	Junction City.
Harvey, John K., A.B.,	Salina.
Haverkamp, Charles W.,	Lawrence.
Leonard, Homer O., jr.,	<i>Kansas City, Mo.</i>
Riney, Fred Harold,	Dodge City.
Swanson, John Theodore,	Independence.
Taylor, Fletcher Burr,	De Soto.
Townsend, Benjamin Ira,	Aurora.
Tuthill, Herbert,	Salina.
Woodin, John G., A.B.,	Lawrence.

FOURTH YEAR, 17.

THIRD YEAR.

Brawley, Mark Abernathy,	Frankfort.
Chilcott, William L.,	Mankato.
Davis, Brett,	Independence.
Harrington, Walter W.,	<i>Kansas City, Mo.</i>
Irland, Robert Douglass,	<i>Kansas City, Mo.</i>
Johnson, Clifford Park,	Coffeyville.
Palmer, William Robert,	Fall River.
Rumsey, Fred Crosby,	Vinland.
Thornton, Warren Thomas,	<i>Kansas City, Mo.</i>

THIRD YEAR, 9.

SECOND YEAR.

Beyer, Loule John,	Inman.
Boren, Arthur Justice,	Winfield.
Eastman, Oscar Frederick,	Bloomington.
Elias, Francis Leander,	Broughton.
Ganoung, Edwin Grant,	Cawker City.
Hissem, Ralph Waldo,	Ellsworth.
Hyndman, Henry Finlay,	Lawrence.

SECOND YEAR—concluded.

Kaulbach, Charlotte,	Kansas City.
Lorimer, Wishard,	Olathe.
Marder, Mortimer,	Kansas City.
Matlock, Thomas T.,	Patterson.
Michener, William Ernest,	Beloit.
Morgan, Edwin Clyde,	Clay Center.
Morrow, Ernest,	Arkansas City.
Mundell, Minnette Smith,	Lawrence.
Padfield, Earl George,	Hutchinson.
Petit, Julian Caesar,	Walnut.
Petit, William D.,	Walnut.
Poutre, Fred Gerald,	Greenleaf.
Ransom, Jack Kennedy,	Otego.
Smith, Cecil,	Beloit.
Townsend, Pinkney,	Edna.
Trekell, Emery,	Wellington.
Tretbar, Julius John,	Inman.
Ward, Carter William,	Osborne.
Wilson, Henry Isbell,	Emporia.

SECOND YEAR, 26.

FIRST YEAR.

Anderson, Bertha Olive,	Lawrence.
Bibler, Dawson,	Beloit.
Bigger, John Dinsmore,	Emporia.
Brownlee, John,	Lawrence.
Corbett, Arthur William,	Emporia.
Culver, Carl Calvin,	Yates Center.
Davis, Philip,	Lawrence.
Fife, George C.,	Kansas City.
Gibson, Edward Thomas,	Kansas City.
Gruber, Charley Merl,	Hope.
Heatley, Evan,	Hiawatha.
Heuser, Chester Henry,	Fort Scott.
Hooper, Charles Warren,	Great Bend.
Haskins, Roy G.,	Lawrence.
Howell, Chauncey Wykoff,	Kansas City.
Knappenberger, George Edwin,	Penalosa.
Koogler, John G.,	Lawrence.
Leib, Clair,	Edna.
Lentz, Leotos,	Belle Plaine.
Milner, Ray Orendorff,	Hartford.
Mudge, Harry Walter,	Attica.
McKinney, Robert B.,	Galena.
McKinney, Will,	Galena.
Norton, Howard,	Kansas City, Mo.
Osborn, Harry Levi,	Nickerson.
Padfield, Robert Elmer,	Hutchinson.
Prather, Benton T.,	Wichita.
Roberts, Sam Earl,	Concordia.
Rogers, Fred,	Lawrence.

FIRST YEAR—*concluded*.

Sloan, William Houser,	. . . . .	<i>Kansas City, Mo.</i>
Smith, Roy Kenneth,	. . . . .	Lincoln.
Stevenson, Earl Ormie,	. . . . .	Altamont.
Teachenor, Frank Randall,	. . . . .	<i>Kansas City, Mo.</i>
Teall, Raymond Edwin,	. . . . .	Oberlin.
Thompson, Herbert,	. . . . .	Edwardsville.
Wilson, John F.,	. . . . .	Kansas City.

FIRST YEAR, 36.

SPECIALS.

Andrews, Laurin Lundy,	. . . . .	Solomon.
Gray, Arthur DeWolfe,	. . . . .	Topeka.
Hale, Arthur E.,	. . . . .	Oronoque.
Hyde, Ida Henrietta,	. . . . .	Lawrence.
Kelley, James Adrian,	. . . . .	Kinsley.
Mundell, Walter N.,	. . . . .	Lawrence.
Owens, Patrick Henry,	. . . . .	Earlton.
Starin, William Alfred,	. . . . .	Netawaka.

SPECIALS, 8.

THE SUMMER SESSION.

Adams, Margaret L., <i>History</i> ,	Topeka.
Agrellus, Frank U. G., <i>Botany</i> ,	Columbia, Mo.
Ahlers, Johannes, <i>Mathematics</i> ,	Lawrence.
Ahrens, H. D., <i>Chemistry</i> ,	Paola.
Alexander, Homer Augustus, <i>Chem., Bot.</i> ,	Nickerson.
Alford, Sylvia, <i>Piano</i> ,	Lawrence.
Allendoerfer, Maurice, <i>French</i> ,	Concordia.
Amick, John S., <i>Law</i> ,	Wellington.
Andrews, Austin C., <i>History</i> ,	Hiawatha.
Bader, Jesse M., <i>Botany, Zoölogy</i> ,	Le Roy.
Bailey, William A., <i>Physical Science</i> ,	Wichita.
Balocca, Fred S., <i>Chemistry</i> ,	Osage City.
Barber, Nettie W., <i>History, Latin</i> ,	Kirwin.
Barbour, Katherine, <i>Violin</i> ,	Lawrence.
Barrett, George G., <i>Chemistry</i> ,	Lawrence.
Bassett, A. J., <i>History, Latin</i> ,	Dover.
Baumgartner, Rachel, <i>German</i> ,	Lawrence.
Beery, Carrie, <i>German</i> ,	Lawrence.
Bender, John T., <i>French</i> ,	Arkansas City.
Benedict, Blanch, <i>Piano</i> ,	Lawrence.
Bernhard, Lillie, <i>Bot., Zoo., Voice</i> ,	Lawrence.
Bernhard, Rillie, <i>Bot., Zoo., Voice</i> ,	Lawrence.
Betts, Sibyl, <i>Entomology</i> ,	Kansas City.
Bigelow, Edward, <i>German</i> ,	Buffalo, N. Y.
Bischoff, Henry J., <i>Geology</i> ,	Washington.
Black, John L., <i>Chemistry, History</i> ,	Lawrence.
Black, Marian Elva, <i>Engl., Phys., Hist.</i> ,	Ottawa.
Blair, Alice, <i>Piano</i> ,	Lawrence.
Bliss, Charles Jay, <i>Chemistry</i> ,	Oskaloosa.
Boener, Edith, <i>Piano</i> ,	Lawrence.
Bohannon, Gaines Bailey, <i>Edu., Math., Hist.</i> ,	Lawrence.
Bozell, Harold Veatch, <i>Shop</i> ,	Kansas City, Mo.
Branch, Hazel, <i>Entomology</i> ,	Wichita.
Brannon, William A., <i>Chemistry</i> ,	Burlington.
Brigham, Clare M., <i>Chemistry</i> ,	Belleville.
Brookens, Edwin Elden, <i>Law</i> ,	Smith Center.
Buck, Lucy, <i>Piano</i> ,	Lawrence.
Burlingame, Carrie M., <i>Fr., Psych.</i> ,	Argentine.
Burnett, Clanrold A., <i>French</i> ,	Girard.
Burt, Louis Bodwell, <i>Chemistry, Shop</i> ,	Alma.
Butcher, Mrs. Angie L., <i>Engl., Ent.</i> ,	Sedan.
Butcher, John T., <i>Engl., Math.</i> ,	Sedan.
Butts, Samuel J., <i>History, Education</i> ,	Jewell.
Campbell, Mary B., <i>Zoölogy</i> ,	Severance.
Carmer, Mae, <i>History, English</i> ,	Topeka.
Cater, F. D., <i>Chemistry</i> ,	Lawrence.
Cater, Ruth, <i>Piano</i> ,	Lawrence.

Chapman, Ethel, <i>Hist., Engl., Soc.</i> ,	Topeka.
Chapman, Inez M., <i>Physics</i> ,	Burlington.
Chesky, Edward Joseph, <i>Hist., Soc.</i> ,	Nickerson.
Chesky, Victor Ernest, <i>Entomology</i> ,	Nickerson.
Clark, Mrs. Eva Gill, <i>Engl., Ger.</i> ,	Burlingame.
Clark, Zoe, <i>English, History</i> ,	Ottawa.
Cocanouer, Joseph A., <i>Bot., Ph. Ed.</i> ,	Blackwell, Okla.
Collins, Olive, <i>Piano</i> ,	Lawrence.
Commons, Clyde R., <i>Law</i> ,	Devon.
Cook, Rosamond, <i>Piano</i> ,	Lawrence.
Corp, Clifford, <i>Chemistry</i> ,	Lawrence.
Couch, Alvan Harvey, <i>Edu., Bot.</i> ,	Sterling.
Coughlin, Edward Henry, <i>Law</i> ,	Edgerton.
Coughlin, Robert E., <i>Law</i> ,	Edgerton.
Crawford, James Elmer, <i>Law</i> ,	Eskridge.
Cupp, Charles D., <i>Physiology</i> ,	Lawrence.
Dalton, Beatrice, <i>Violin</i> ,	Lawrence.
Dalton, Mrs. B. J., <i>Organ</i> ,	Lawrence.
Dalton, Nellie, <i>Piano</i> ,	Lawrence.
Davis, Silas I., <i>Shop</i> ,	Lawrence.
Day, Marguerite, <i>Piano</i> ,	Lawrence.
Dillard, Mary J., <i>French</i> ,	Lawrence.
Doubleday, Floyd E., <i>Law</i> ,	Lawrence.
Douthart, Lela T., <i>English</i> ,	Kansas City.
Downs, Thomas P., <i>Law</i> ,	Beloit.
Drake, Frank, <i>Law</i> ,	Emporia.
Duncan, George H., <i>Pharmacy</i> ,	Jetmore.
Durham, Hugh, <i>Mathematics, English</i> ,	Randall.
Ebel, Bartel E., <i>Latin, English</i> ,	Hillsboro.
Edmonds, Letha, <i>Piano</i> ,	Lawrence.
Engle, Agnes, <i>Piano</i> ,	Lawrence.
Finney, Royal H., <i>Zoölogy</i> ,	La Junta, Colo.
Fisher, Thekla, <i>English, Education</i> ,	Lyons.
Fisher, Wilhelm R., <i>Zoölogy</i> ,	Lyons.
Fitch, Louise, <i>Organ</i> ,	Lawrence.
Fleming, John A., <i>Law</i> ,	Buffalo.
Floyd, Luther Edward, <i>Chemistry, Physics</i> ,	Leavenworth.
Foraker, Nora, <i>Education, Psychology</i> ,	Wellington.
Ford, B. E., <i>Entomology</i> ,	Ellis.
Fowler, Harry, <i>Violin</i> ,	Independence.
Frederick, Nora E., <i>Physics</i> ,	Arcadia.
Frye, Ora, <i>Engl., Edu., Voice</i> ,	Lawrence.
Garrett, Mayme, <i>Piano</i> ,	Lawrence.
Garvin, Daisy, <i>Piano</i> ,	Lawrence.
Gause, Charles I., <i>Shop, Mathematics</i> ,	Mound City.
Gibbens, Leo Thomas, <i>Law</i> ,	Kingman.
Glenn, Pressly Adams, <i>Entomology</i> ,	Lawrence.
Goddard, Annie, <i>Geology</i> ,	Dunavant.
Goernandt, C. L., <i>Chemistry, English</i> ,	Aurora.
Goodwin, Edith A., <i>Mathematics</i> ,	Chapman.
Gossard, Charles O., <i>German</i> ,	Kansas City, Mo.
Grant, Eugene W., <i>Law</i> ,	Emporia.

Green, Bessie B., <i>Chemistry, English,</i>	Coffeyville.
Griesa, William S., <i>Entomology,</i>	Lawrence.
Guthridge, Lemuel A., <i>Engl., Soc., Psych.,</i>	Independence.
Hall, Justus O., <i>Education,</i>	Beloit.
Hammond, Gerald Douglas, <i>Shop,</i>	Winfield.
Handley, Blanche, <i>Chemistry, English,</i>	Oswego.
Haney, Edward E., <i>Law,</i>	Paola.
Harris, Jack P., <i>Hist., Eco., Engl.,</i>	Ottawa.
Hart, Harry A., <i>Engl., Hist., Ph. Ed.,</i>	Beloit.
Hase, Clara, <i>Piano,</i>	Lawrence.
Haskett, Ivy, <i>Education, English,</i>	Concordia.
Hayden, Maud, <i>Piano,</i>	Sandusky, N. Y.
Hazelrigg, Mildred, <i>Organ,</i>	Topeka.
Hellmann, E. L., <i>Chemistry, Mathematics,</i>	Quenemo.
Hensen, Janette, <i>Piano,</i>	Lawrence.
Hilkey, Charles Joseph, <i>Law,</i>	Scranton.
Hillabrant, John W., <i>Chemistry,</i>	Washington.
Hodgson, Charlotte, <i>Organ,</i>	Lawrence.
Huerter, A. B., <i>Chemistry,</i>	Seneca.
Hull, Blanche Edith, <i>Entomology,</i>	Lawrence.
Hull, Byra Elsie, <i>English, Psychology,</i>	Nickerson.
Hutchinson, Mrs. W. B., <i>Piano,</i>	Lawrence.
Ingleman, Anna, <i>Education,</i>	Lawrence.
Ise, Charles Daniel, <i>Law,</i>	Downs.
Jacobs, Woody, <i>Entomology,</i>	Topeka.
James, Edward L., <i>Chemistry, Shop,</i>	Kansas City, Mo.
Jennings, James T., <i>Law,</i>	Nickerson.
Johnson, Edith, <i>Hist., Ger., Engl.,</i>	Topeka.
Johnson, J. Harold, <i>Mathematics,</i>	Mankato.
Johnson, Maude Eddy, <i>Piano,</i>	Lawrence.
Johnston, Mary Helen, <i>Entomology,</i>	Lawrence.
Kane, Morton J., <i>Physical Science,</i>	Scammon.
Keith, Helen, <i>Piano,</i>	Lawrence.
Kelley, Anna Armona, <i>Hist., Soc., Psych.,</i>	Topeka.
Kemp, Delbert C., <i>Voice,</i>	Lawrence.
Kennedy, Actea, <i>Engl., Soc., Hist.,</i>	Topeka.
Kennedy, Ada, <i>Soc., Hist., Engl.,</i>	Topeka.
Kenney, Ruth, <i>Soc., Hist., Math.,</i>	Lawrence.
Kent, Mattie, <i>Latin, Education,</i>	Lawrence.
Kezer, Charles Leonard, <i>History,</i>	Stillwater, Okla.
Kiefer, Norman, <i>Soc., Hist., Eco.,</i>	Lawrence.
King, Jefferson Perry, <i>English,</i>	Kansas City.
Kiser, Florence, <i>Education,</i>	Lawrence.
Knight, Mildred, <i>Piano,</i>	Lawrence.
Knott, Joseph, <i>Botany, Chemistry,</i>	Yates Center.
Kraft, John George, jr., <i>Mathematics,</i>	Winfield.
Krehbiel, Christian Rudolph, <i>Chemistry,</i>	Moundridge.
Laird, Paul E., <i>Chemistry,</i>	Argentine.
Landers, Harriet, <i>Physics,</i>	Frankfort.
Landis, May, <i>Physics, Physical Science,</i>	Lawrence.
Landrum, Claude G., <i>Zoology,</i>	Gardner.
Lansdon, William C., <i>History,</i>	Lawrence.

Larson, Esther, <i>German</i> ,	Ottawa.
Lee, Floyd B., <i>Mathematics</i> ,	Osawatomie.
Leonard, Alice, <i>Organ</i> ,	Lawrence.
Leslie, Hazel, <i>Voice</i> ,	Lawrence.
L'heureux, Pearl Astella, <i>French, English</i> ,	Nickerson.
Light, Naomi, <i>Piano</i> ,	Lawrence.
Lindsey, Ray Duncan, <i>Chemistry</i> ,	Cherryvale.
Long, Ethel E., <i>Piano</i> ,	Guthrie, Okla.
Long, Maggie Belle, <i>History, French</i> ,	Lawrence.
Long, Octavia Cornelia, <i>English, Economics</i> ,	Lawrence.
Long, Sarah E., <i>Education</i> ,	Guthrie, Okla.
Loomis, Alexander C., <i>Shop, Mathematics</i> ,	Topeka.
Lorig, Marx L., <i>French</i> ,	Oberlin.
Lovan, Owen, <i>Chemistry</i> ,	Leavenworth.
Lucas, Asa Walter, <i>Law</i> ,	Admire.
Luce, Cora M., <i>Ger., Hist., Engl.</i> ,	Ottawa.
Madden, Marie, <i>English, History</i> ,	Mound City.
Madden, Pauline, <i>Engl., Hist., Soc.</i> ,	Mound City.
Manley, Lester B., <i>Law</i> ,	Lawrence.
Mann, Albert A., <i>Law</i> ,	Lawrence.
Melton, Grace, <i>Ger., Lat., Edu.</i> ,	Yates Center.
Merillat, Chris C., <i>Law</i> ,	Lafontaine.
Milton, Sidney McGarvey, <i>Physiology</i> ,	Lawrence.
Moodie, William Leslie, <i>Botany</i> ,	Lawrence.
Morgan, W. E., <i>Mathematics, Botany</i> ,	Columbus.
Morin, Mary, <i>Piano</i> ,	Williamstown.
Morrow, E. L., <i>Chemistry</i> ,	Arkansas City.
Mudge, Harry W., <i>Chemistry</i> ,	Attica.
Mulvihill, Cella, <i>Physical Science</i> ,	Perry.
Murphy, Gertrude, <i>Voice</i> ,	Lawrence.
Murphy, James Wilson, <i>Chemistry</i> ,	Lawrence.
McCanles, Wendell W., <i>Law</i> ,	Lincoln.
McCarty, George, <i>Voice</i> ,	Lecompton.
McCarty, Virgil W., <i>Fr., Eng., Eco.</i> ,	La Harpe.
McConaughy, David C., <i>Chemistry</i> ,	Atchison.
McCrary, Donald E., <i>German, Law</i> ,	Emporia.
McCroskey, Ward C., <i>Law</i> ,	Wellington.
McLean, Helen, <i>Education, German</i> ,	Topeka.
McFarland, Ruth, <i>Piano</i> ,	Lawrence.
McLenon, William N., <i>Entomology, Law</i> ,	Everest.
McQuown, William I., <i>Geology</i> ,	Walton.
McWilliams, Samuel J., <i>Law</i> ,	Fort Scott.
Nash, Clarence A., <i>Chemistry</i> ,	Sterling.
Newcomb, Fred, <i>German</i> ,	Burlington.
Neyhart, Maud, <i>Latin</i> ,	Burlington.
Nixon, Henry, <i>Shop</i> ,	Kansas City, Mo.
Nottingham, Avon R., <i>Engineering</i> ,	Lawrence.
Olney, Frank H., <i>History, Sociology</i> ,	Lawrence.
Osborn, Swazill, <i>Voice</i> ,	Kansas City, Mo.
Palmer, Emma May, <i>German</i> ,	Lawrence.
Passon, Rebecca, <i>Piano</i> ,	Lawrence.
Patchejieff, Boris J., <i>Mathematics</i> ,	Sophia, Bulgaria, Europe.

Pendleton, Helen, <i>Piano</i> ,	Lawrence.
Pendleton, Laura, <i>Piano</i> ,	Lawrence.
Pettingill, Anne, <i>Piano</i> ,	Linwood.
Pierson, Jesse V., <i>Law</i> ,	Frankfort.
Poe, Charles R., <i>Mathematics</i> ,	Lawrence.
Poindexter, Marlin H., <i>Botany, Sociology</i> ,	Topeka.
Pressler, Kathrina, <i>German</i> ,	Fort Scott.
Quinn, John C., <i>Law</i> ,	Ottawa.
Ralston, Hervie, <i>Mathematics, History</i> ,	Kansas City.
Ramsey, Chester A., <i>Law</i> ,	Lawrence.
Ransom, Jack Kennedy, <i>French</i> ,	Otego.
Reding, Mary G., <i>Piano</i> ,	Lawrence.
Reno, Edward Newton, <i>Hist., Psych.</i> ,	Lawrence.
Reynolds, Katherine, <i>Voice</i> ,	Clay Center.
Richards, Aute, <i>Math., Ph. Sci.</i> ,	Lawrence.
Riddle, Arthur Fuller, <i>Law</i> ,	Minneapolis.
Riggs, Kate, <i>Voice</i> ,	Lawrence.
Rinehart, Blanche, <i>Chemistry</i> ,	Lawrence.
Riste, Roy B., <i>Shop</i> ,	Oberlin.
Robb, Mina Richie, <i>Entomology</i> ,	Salina.
Robb, W. S., <i>History</i> ,	Larned.
Robinson, Jennie Frances, <i>Piano</i> ,	Lawrence.
Robinson, Wilma, <i>Voice, Piano</i> ,	Lawrence.
Root, Charles Burton, <i>Physiology</i> ,	Lawrence.
Ruppenthal, Jacob Christian, <i>Ger., Math.</i> ,	Russell.
Russ, Gertrude, <i>Chemistry</i> ,	Lawrence.
Russell, Mary, <i>Piano</i> ,	Lawrence.
Scammon, Richard E., <i>Chemistry</i> ,	Lawrence.
Schleifer, Carrie, <i>Piano</i> ,	Ottawa.
Schleifer, Lena, <i>Piano</i> ,	Lawrence.
Sears, Helen Mar, <i>English, Education</i> ,	Atchison.
Sellards, May, <i>Piano</i> ,	Lawrence.
Sellers, Alice Pearl, <i>German</i> ,	Lawrence.
Senseman, William B., <i>Shop</i> ,	Harper.
Shelby, Ada Catherine, <i>Chem., Bot.</i> ,	Lawrence.
Shields, Florence L., <i>History, French</i> ,	Garnett.
Shinn, Clay B., <i>Mathematics</i> ,	Ottawa.
Siceloff, David Guy, <i>Botany</i> ,	Lawrence.
Siller, Charles A., <i>Physiology</i> ,	Lawrence.
Simkins, Louise, <i>History, English</i> ,	Colorado Springs, Colo.
Simons, Mrs. W. C., <i>Voice</i> ,	Lawrence.
Simpson, Henry L., <i>French, History</i> ,	Kansas City.
Sinclair, Effie, <i>English</i> ,	Burlington.
Sipple, Caleb B., <i>Shop, Mathematics</i> ,	Sedan.
Slatten, Edith, <i>Soc., Hist., Engl.</i> ,	Topeka.
Smith, C. F., <i>German</i> ,	El Dorado.
Smith, Owen, <i>Engineering</i> ,	Independence.
Stallmann, Lulu E., <i>French, English</i> ,	Hutchinson.
Stannard, George, <i>Shop, History</i> ,	Ottawa.
Stephenson, Thomas J., <i>Mathematics</i> ,	Holton.
Stevens, Vera, <i>Piano</i> ,	Lawrence.
Stevenson, Nelly May, <i>Edu., Hist.</i> ,	Lawrence.

Stewart, Ross R., <i>Chemistry</i> ,	Lawrence.
Stone, Rosalia Rachel, <i>Physiology, Botany</i> , .	Walton.
Stroud, John Earl, <i>History, English</i> , . . .	Howard.
Stuart, Geraldine, <i>English, Psychology</i> , . .	Lawrence.
Taylor, Cora A., <i>Piano</i> ,	Lawrence.
Tear, Grace, <i>Sociology, Chemistry</i> ,	Wichita.
Terrill, Nellie C., <i>German</i> ,	Lawrence.
Thayer, Allyn Knight, <i>Chemistry</i> ,	Kansas City, Mo.
Tompkins, M. Harvey, <i>Chemistry, Physics</i> , .	Oskaloosa.
Van Arsdale, John, <i>German</i> ,	Pleasanton.
Vest, Lucy G., <i>Education, English</i> ,	Galena.
Vigg, Sandor J., <i>Law</i> ,	Alva, Okla.
Walker, Charles Neville, <i>English</i> ,	Kansas City.
Wall, Paul Jean, <i>Law</i> ,	Wichita.
Wallace, Cora L., <i>Soc., Ger., Engl.</i> ,	Topeka.
Walters, Gertrude Marian, <i>Education</i> , . . .	Horton.
Warkentin, J. K., <i>Botany, Zoölogy</i> ,	Hillsboro.
Watson, J. R., <i>Chemistry, Shop</i> ,	Lawrence.
Wattles, Willard A., <i>English, German</i> , . . .	Bayneville.
Weimer, William, <i>Shop</i> ,	Americus.
White, Edward A., <i>Chemistry</i> ,	Independence.
Whitney, Martha S., <i>Latin</i> ,	Olathe.
Wilhelmi, Max F., <i>Botany</i> ,	Lawrence.
Wilhelm, Ruth, <i>Piano</i> ,	Lawrence.
Williams, Effie, <i>English</i> ,	Lawrence.
Williams, Minnie L., <i>Physics</i> ,	Lawrence.
Withington, Charles H., <i>Entomology</i> , . . .	Manhattan.
Wolcott, Grace G., <i>Mathematics</i> ,	Topeka.
Woodhead, G. Madge, <i>History, Latin</i> , . . .	Lawrence.
Woodin, Abbie, <i>English, German</i> ,	Iola.
Woodward, Eva, <i>Piano</i> ,	Lawrence.
Wycoff, C. B., <i>Chemistry</i> ,	Garnett.
Young, Mildred, <i>Piano</i> ,	Lawrence.
Zerby, Lucia, <i>Voice</i> ,	Lawrence.

SUMMER SESSION, 289.

UNIVERSITY EXTENSION STUDENTS.

EUROPEAN HISTORY.

Kansas City, Kan.

Albaugh, Myra.	Fitch, Laura.	Mack, Isabella.
Bean, Dora.	Frazer, Lella.	Mann, Sadie.
Boring, Jo.	Frush, Isabel.	Martin, Orpha.
Boyd, J. E.	Glascock, Helen.	Meyer, Ida.
Buster, G. B.	Green, Mary.	Myers, C. W.
Cady, Maude.	Haner, Mabel.	O'Roark, Franc.
Canaday, Minne.	Harman, May.	Porter, Gertrude.
Cochran, Orpha.	Hindman, Pauline.	Ralston, Jennie.
Collins, Mary.	Howard, J. L.	Riggs, Lucy.
Colton, Martha.	Husson, Ellyn.	Serviss, Mildred.
Constant, Lillian.	Hyden, Ingeborg.	Sheppard, Ina.
Daniels, Katie.	Knox, Florence.	Soward, Elizabeth.
Davis, May.	Lasley, Hallie.	Vanous, Emma.
Davis, Tyna.	Lasley, Mabel.	Wasson, Pearl.
Donnelly, Eva.	Logan, W. J.	Whinery, Clare.
Downs, Roberta.	McCurdy, Cora.	Wideman, Violetta.
Eaton, Joanna.	McKean, H. W.	Wilson, Laura.
Evans, Albert.	McKinley, Bertha.	Wilson, Mabel.
Evans, Margaret.		

PHILOSOPHY.

Kansas City, Kan.

McCoy, Lucy.	McCormick, Winona.	Patterson, J. E.
Showalter, Cora.	Collins, Elizabeth.	Fligor, Elizabeth.
Graves, Luella.	Randles, Anna.	Wood, Ida.
Lewis, J. J.	Harlan, Laura.	Watkins, Alice.
Davis, Lizzie.	Lawrence, Mattie.	Davis, Mattie.
Pinkham, Maude.	Relgen, Lydia.	Walker, C. N.
Winslow, J. M.	Dana, Della.	Flagg, Elizabeth.
Haynes, Alta.	Ward, R. L.	Varney, Royal.
McCarty, W. J.	Dougherty, Lucy.	Douthart, Lela.
Helwig, Mary.	Myers, Stella.	Cory, Alberta.
Woodyard, Ella.	Morgan, I. B.	Meldrum, Ellen.
Bogle, A. M.	Thompson, Martha.	Allen, H. C.
Kendrick, E. K.	White, E. A.	Hirst, Clara.
Layman, A. F.	Vaughan, Ethel.	Jennings, Lu.
Taylor, Rachel.	Monahan, Dora.	Sharpe, Helen.

EDUCATION.

Kansas City, Kan.

Anderson, Harriett V.	Gilbert, Don C.	Neely, Albert J.
Armstrong, Lucy M.	Grant, Frances B.	Porter, George F.
Brown, Dora.	Hilliard, Marian.	Porter, Elizabeth F.
Childers, Nora.	Hoyt, Helen.	Quinly, Daisy M.
Chinn, Sarah A.	Humphrey, Adela.	Raymond, Henry H.
Cole, Bertha.	Jackson, Ernest H.	Reynolds, Archibald L.
Corbin, Nelle C.	Johnson, Georgia.	Sackett, Flora.
Dana, Bertha.	Johnston, E. Estella.	Shepherd, William M.
Darrow, L. DeWitt.	King, Jefferson P.	Smothers, Trussie.
Dixon, Mabel.	Klein, Mame C.	Taylor, Ethel.
Dougherty, Mary L.	Kreamer, Lena.	Todd, Helen Frances.
Drake, Minnie B.	Litchfield, Ethel.	Tracy, Frank D.
Drisko, Carrie.	Maxwell, John J.	Van Cleave, Maude B.
Dunn, Dola.	McDougall, Anna L.	Walberg, Beda.
Duvall, Lot M.	McDougall, Dora.	William, B.
Eggleston, Clara V.	McIlwain, Rose.	Wilson, Estella M.
Ensworth, Mary.	Miller, Gertrude H.	Wright, Silas F.
Fannan, Anna.	Miner, Florence P.	Yenawine, Bertha.
Gager, Luella.		

SUMMARY OF ENROLMENT.

1907-'08.

DEPARTMENTS.	Men.	Women.	Total.
The Graduate School	61	41	102
The College of Liberal Arts and Sciences	453	446	899
Senior Class.....	59	62	121
Junior Class.....	54	70	124
Sophomore Class.....	100	106	206
Freshman Class.....	176	149	325
Special Students.....	64	59	123
The School of Engineering	479		479
Senior Class.....	68		68
Junior Class.....	64		64
Sophomore Class.....	130		130
Freshman Class.....	199		199
Special Students.....	13		13
Unclassified	5		5
The School of Fine Arts	19	164	183
Graduate Students.....		1	1
Senior Class.....	1	7	8
Junior Class.....	2	19	21
Sophomore Class.....		22	22
Freshman Class.....	5	38	43
Special Students.....	11	77	88
The School of Law	184	2	186
Senior Class.....	47	1	48
Middle Class.....	42		42
Junior Class.....	88		88
Special Students.....	7	1	8
The School of Pharmacy	89	5	94
Senior Class.....	21	2	23
Junior Class.....	65	2	67
Special Students.....	3	1	4
The School of Medicine	96	5	101
Graduate Students	5		5
Fourth-year Class.....	16	1	17
Third-year Class.....	9		9
Second-year Class.....	24	2	26
First-year Class.....	35	1	36
Special Students.....	7	1	8
The Summer Session	153	136	289
Graduate Students	21	13	34
Undergraduate Students.....	132	123	255
Total enrolment in all the schools	1,534	799	2,333
Names counted twice.....	75	39	114
Current Students in last Summer Session.....	98	58	156
Total registration, 1907-'08.....	1,361	702	2,063

CLASSIFICATION OF STUDENTS.

BY KANSAS COUNTIES.

Allen	30	Greenwood.....	16	Ottawa	13
Anderson.....	18	Hamilton.....	2	Pawnee.....	9
Atchison.....	15	Harper	14	Phillips.....	5
Barber.....	1	Harvey	21	Pottawatomie.....	16
Barton.....	15	Hodgeman.....	1	Pratt	10
Bourbon.....	31	Jackson.....	11	Reno.....	32
Brown.....	35	Jefferson	18	Republic.....	18
Butler.....	21	Jewell.....	11	Rice.....	24
Chase.....	9	Johnson	26	Riley.....	6
Chautauqua.....	12	Kingman	11	Rooks.....	6
Cherokee	28	Kiowa.....	2	Rush.....	5
Clark.....	2	Labette.....	28	Russell.....	5
Clay.....	22	Lane.....	1	Saline.....	11
Cloud.....	12	Leavenworth	28	Scott.....	3
Coffey	22	Lincoln	12	Sedgwick.....	35
Comanche	1	Linn.....	14	Seward	1
Cowley	15	Lyon.....	21	Shawnee.....	53
Crawford.....	29	Marion.....	13	Sheridan.....	6
Decatur.....	6	Marshall.....	28	Smith.....	10
Dickinson.....	31	McPherson	18	Stafford.....	2
Doniphan.....	14	Meade.....	5	Stanton.....	1
Douglas *.....	540	Miami.....	16	Stevens.....	1
Edwards.....	1	Mitchell.....	19	Sumner.....	29
Elk	10	Montgomery.....	37	Thomas.....	4
Ellis.....	12	Morris.....	9	Trego.....	6
Ellsworth.....	10	Nemaha.....	15	Wabaunsee.....	5
Finney.....	10	Neosho	21	Washington.....	23
Ford.....	9	Ness.....	3	Wilson.....	17
Franklin.....	31	Norton.....	4	Woodson.....	6
Geary.....	6	Osage.....	32	Wyandotte.....	90
Gove.....	1	Osborne.....	11		

* A large number of students whose names appear in this catalogue as residents of Douglas county are so catalogued because they temporarily reside in Lawrence for the purpose of attending the University.

CLASSIFICATION BY STATES.

Colorado.....	4	New York.....	3
Cuba.....	1	Oklahoma.....	19
Illinois.....	3	Pennsylvania.....	1
Iowa.....	5	South Dakota.....	2
Kansas	1,919	Utah.....	2
Missouri.....	96	Vermont.....	1
Nebraska.....	2	Virginia.....	1
New Mexico.....	4	Total.....	2,063

ACKNOWLEDGMENTS.

Gifts to the Library, March, 1907, to March, 1908.

	<i>Vols.</i>
American Philosophical Society, Philadelphia, Pa.....	1
Bureau of Labor Statistics, Springfield, Ill.....	1
Carnegie Institute, Pittsburg, Pa.....	2
Carnegie Institution, Washington.....	28
Chalkley, Mrs. T. H., Lawrence.....	2
Duncan, Prof. Robert K., Lawrence.....	1
Dunlap, Prof. Charles G., Lawrence.....	9
Fidler, Alfred, Kansas City, Mo. (Bequest.).....	63
Flood, T. H. & Co., Chicago, Ill.....	12
Hodder, Prof. Frank H., Lawrence.....	2
Interstate Commerce Commission, Washington.....	1
Library of Congress, Washington.....	4
Lockwood, Miss Laura E., Wellesley, Mass.....	1
Miller, Prof. E., Lawrence.....	4
Missouri Botanical Garden, St. Louis.....	1
Oregon Historical Association, Salem, Ore.....	1
Perkins, L. H., Lawrence. (Bequest.).....	288
Renn, Miss Lula, Lawrence.....	40
Schoch, Prof. A. D., Lawrence.....	11
Stimpson, F. E., Lawrence.....	2
Superintendent of Immigration, Ottawa, Canada.....	1
Superintendent of Public Instruction, Topeka.....	1
U. S. Bureau of Education, Washington.....	1
U. S. Commissioner of Labor, Washington.....	2

NEWSPAPERS AND PERIODICALS.

Given by publishers, unless otherwise indicated.

DAILIES.

Abilene Daily Reflector.....	Abilene.
Chanute Daily Sun.....	Chanute.
Coffeyville Daily Journal.....	Coffeyville.
Daily Republican.....	Clay Center.
Des Moines Capital.....	Des Moines, Iowa.
El Dorado Republican.....	El Dorado.
Evening Free Press.....	Winfield.
Evening Telegram.....	Garden City.
Evening Star.....	Independence.
Evening Kansas Republican.....	Newton.
Fort Scott Daily Republican.....	Fort Scott.
Fort Scott Daily Tribune and Monitor.....	Fort Scott.
Great Bend Daily Rustler.....	Great Bend.
Hutchinson Daily News.....	Hutchinson.
Independence Daily Reporter.....	Independence.
Iola Daily Register.....	Iola.
Kansas City, Kansas, Globe.....	Kansas City.

DAILIES—concluded.

Kansas City Journal.....	Kansas City, Mo.
Kansas City Star and Times.....	Kansas City, Mo.
Lawrence Daily Gazette.....	Lawrence.
Lawrence Daily Journal.....	Lawrence.
Lawrence Daily World.....	Lawrence.
Leavenworth Times	Leavenworth.
Leavenworth Post	Leavenworth.
McPherson Daily Republican.....	McPherson.
Parsons Daily Sun.....	Parsons.
Pittsburg Headlight	Pittsburg.
Salina Evening Journal.....	Salina.
Topeka Capital	Topeka.
Topeka State Journal.....	Topeka.

WEEKLIES.

Abilene Democrat	Abilene.
Abilene Weekly Chronicle.....	Abilene.
Advocate Democrat	Marysville.
Allen County Herald (semiweekly).....	Humboldt.
Alma Enterprise	Alma.
Anthony Republican	Anthony.
Atchison Weekly Globe.....	Atchison.
Barton County Democrat	Great Bend.
Baxter Springs News.....	Baxter Springs.
Belle Plaine News.....	Belle Plaine.
Belleville Freeman	Belleville.
Belleville Telescope	Belleville.
Beloit Times	Beloit.
Better Way	Minneapolis.
Bison Bee	Bison.
Blue Mound Sun.....	Blue Mound.
Blue Rapids Times.....	Blue Rapids.
Breeders' Gazette	Chicago, Ill.
Brown County World	Hiawatha.
Burlington Democrat	Burlington.
Burlington Independent	Burlington.
Burlington Republican	Burlington.
Caney Chronicle	Caney.
Cawker City Ledger.....	Cawker City.
Central Kansas Democrat.....	Lyons.
Chapman Advertiser	Chapman.
Chase Register	Chase.
Chase County Leader.....	Cottonwood Falls.
Christian Register	Boston, Mass.
Clark County Clipper	Ashland.
Clay Center Dispatch.....	Clay Center.
Clay Center Times.....	Clay Center.
Columbus Advocate	Columbus.
Commoner	Lincoln, Neb.
Comet	Courtland.
Courier-Democrat	Seneca.
Dickinson County News.....	Abilene.

WEEKLIES—*continued.*

De Soto Eagle Eye.....	De Soto.
El Dorado Republican	El Dorado.
Elk County Citizen.....	Howard.
Ellsworth Messenger	Ellsworth.
Erie Record	Erie.
Esbon Times	Esbon.
Effingham Bulletin	Effingham.
Eureka Herald	Eureka.
Farmer and Stockman	Kansas City, Mo.
Galena Republican	Galena.
Garnett Journal	Garnett.
Glasco Sun	Glasco.
Globe	Meade.
Grant County Republican	Ulysses.
Great Bend Register.....	Great Bend.
Herald of Gospel Liberty.....	Dayton, Ohio.
Herington Times	Herington.
Holyrood Banner	Holyrood.
Holton Recorder	Holton.
Holton Signal	Holton.
Howard Courant	Howard.
Illustrated London News (Mrs. T. H. Chalkley, Law- rence)	London, England.
Inman Review	Inman.
Independent News	Girard.
Irving Leader	Irving.
Jetmore Republican	Jetmore.
Jewell County Monitor.....	Mankato.
Kansas Commoner	Wichita.
Kansas Farmer	Topeka.
Kansas Democrat	Hiawatha.
Kansas Star	Olathe.
Kingman Journal	Kingman.
Kiowa County Signal.....	Greensburg.
Kiowa News Review.....	Kiowa.
La Crosse Republican	La Crosse.
La Cygne Weekly Journal.....	La Cygne.
Larned Weekly Chronoscope.....	Larned.
Lawrence Germania	Lawrence.
Lincoln Republican	Lincoln Center.
Lindsborg News	Lindsborg.
Linn County Republican.....	Mound City.
Long Island New Leaf.....	Long Island.
Longton Gleaner	Longton.
Louisville Lyre	Louisville.
Lyons Republican	Lyons.
Mail and Breeze.....	Topeka.
Manhattan Mercury	Manhattan.
Manhattan Nationalist	Manhattan.
Marion Record	Marion.
Marshall County News.....	Marysville.

WEEKLIES—*continued.*

Miami Republican	Paola.
Minneapolis Messenger	Minneapolis.
Neodesha Register	Neodesha.
Ness County News	Ness City.
Nickerson Argosy	Nickerson.
Norton Courier	Norton.
Oakley Graphic	Oakley.
Olathe Mirror	Olathe.
Osage City Free Press	Osage City.
Osawatomie Graphic	Osawatomie.
Osborne County Farmer	Osborne.
Oswego Democrat	Oswego.
People's Voice	Wellington.
Pleasanton Observer	Pleasanton.
Pratt Union	Pratt.
Pratt Republican	Pratt.
Press	Kansas City.
Progress	Minneapolis.
Public (E. E. Soderstrom, Emporia)	Chicago, Ill.
Public Opinion	Osage City.
Randolph Enterprise	Randolph.
Record	Russell.
Republic City News	Republic City.
Republican Record	Hays City.
Rice County Eagle	Lyons.
Robinson Index	Robinson.
Rooks County Record	Stockton.
Rush City Breeze	Rush City.
Sabetha Herald	Sabetha.
Sabetha Star	Sabetha.
Salina Union (semiweekly)	Salina.
Smith County Pioneer	Smith Center.
Stafford Courier	Stafford.
Sterling, Kansas, Bulletin	Sterling.
St. Paul Journal	St. Paul.
Seneca Courier-Democrat	Seneca.
South Kansas Tribune	Independence.
St. Louis Semiweekly Star	St. Louis, Mo.
Torch of Liberty	Mound City.
United Presbyterian	Pittsburg, Pa.
Valley Center Index	Valley Center.
Vanguard	St. Louis, Mo.
Wamego Times	Wamego.
Washington Register	Washington.
Washington Palladium	Washington.
Wallace Times	Wallace, Idaho.
Waterville Telegraph	Waterville.
Wathena Times	Wathena.
Wathena Weekly Republican	Wathena.
Weekly Kansas Chief	Troy.
Western Call	Beloit.

WEEKLIES—concluded.

Westmoreland Record	Westmoreland.
Westmoreland Signal	Westmoreland.
Wichita Eagle	Wichita.
Wilson Echo	Wilson.
Williamsburg Star	Williamsburg.
Wyandotte Herald	Kansas City.

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